J Comp Physiol (1983) 151:1–34

Journal of Comparative Physiology
© Springer-Verlag 1983

Author Index to Volumes 121–150 (1977–1983)

A

Abbotts B, Wang LCH (1980) Seasonal Thermogenic Capacity in a Hibernator, *Spermophilus richardsonii* 140:235
Abe AS, see Glass ML, et al
Abeln RG, see Tinbergen J
Ache BW, Fuzessery ZM (1979) Chemosensory Integration in the Spiny Lobster: Ascending Activity in the Olfactory-Globular Tract 130:63
Ache BW, Sandeman DC (1980) Olfactory-Induced Central Neural Activity in the Murray Crayfish, *Euastacus armatus* 140:295
Ache BW, see Hamilton KA
Adler K, Taylor DH (1980) Melatonin and Thyroxine: Influence on Compass Orientation in Salamanders 136:235
Adler K, Taylor DH (1981) Toad Orientation: Variability of Response and Its Relationship to Individuality and Environmental Parameters 144:45
Adler K, see Taylor DH
Ahearn GA, see Brick RW
Aicher B, Markl H, Masters WM, Kirschenlohr HL (1983) Vibration Transmission Through the Walking Legs of the Fiddler Crab, *Uca pugilator* (Brachyura, Ocypodidae) as Measured by Laser Doppler Vibrometry 150:483
Aicher B, see Masters WM, et al
Aicher B, see Tautz J, et al
Aitkin LM, see Coles RB
Akster HA, see Granzier HLM, et al
Albrecht L, see Ewert J-P, et al
Ali KE, see Engelhardt W v, et al
Altman JS, see Kien J
Altringham JD, Johnston IA (1981) Quantitative Histochemical Studies of the Peripheral Innervation of Cod (*Gadus morhua*) Fast Myotomal Muscle Fibres 143:123
Al-Wassia A, see Taylor EW, et al
Amende LM, Pierce SK (1980) Cellular Volume Regulation in Salinity Stressed Molluscs: The Response of *Noetia ponderosa* (Arcidae) Red Blood Cells to Osmotic Variation 138:283
Amende LM, Pierce SK (1980) Free Amino Acid Mediated Volume Regulation of Isolated *Noetia ponderosa* Red Blood Cells: Control by Ca^{2+} and ATP 138:291
Amende LM, Pierce SK (1980) Structural Changes of *Noetia ponderosa* Red Blood Cell Membranes During Cell Volume Regulation in Reduced Salinities: A Freeze Fracture Study 138:299
Amon T, see Čokl A
Ampleford EJ, Steel CGH (1982) Circadian Control of Ecdysis in *Rhodnius prolixus* (Hemiptera) 147:281
Andersen SO, Thompson PR, Hepburn HR (1981) Cuticular Sclerotization in the Honeybee (*Apis mellifera adansonii*) 145:17
Andersen SO, see Waite JH, et al
Anderson AM (1979) Visual Scanning in the Honey Bee 130:173
Anderson PAV, see Chain BM, et al
Andjan AS, see Popov AV, et al
Ando M (1980) Chloride-Dependent Sodium and Water Transport in the Seawater Eel Intestine 138:87
Ando M (1981) Effects of Ouabain on Chloride Movements Across the Seawater Eel Intestine 145:73
Ando M, see Kobayashi M, et al
Andresen P, see Gesser H, et al
Andrew RD, Saleuddin ASM (1979) Two-Dimensional Gel Electrophoresis of Neurosecretory Polypeptides in Crustacean Eyestalk 134:303
Angersbach D (1978) Oxygen Transport in the Blood of the Tarantula *Eurypelma californicum*: pO_2 and pH during Rest, Activity and Recovery 123:113
Angersbach D, Decker H (1978) Oxygen Transport in Crayfish Blood: Effect of Thermal Acclimation, and Short-Term Fluctuations Related to Ventilation and Cardiac Performance 123:105
Angst ME, see Mustaparta H, et al
Aoki K, see Arikawa K
Ar A, see Storier D, et al
Arch S, Lupatkin J, Smock T, Beard M (1980) Evidence for an Exocrine Function of the *Aplysia* Atrial Gland 141:131
Arch S, Smock T, Gurvis R, McCarthy C (1978) Atrial Gland Induction of the Egg-Laying Response in *Aplysia californica* 128:67
Aréchiga H, see Frixione E
Aréchiga H, see Tsutsumi V, et al
Arikawa K, Aoki K (1982) Response Characteristics and Occurrence of Extraocular Photoreceptors on Lepidopteran Genitalia 148:483
Armand J, see Dejours P
Asakura K (1980) The Anal Portion as a Salt-Excreting Organ in a Seawater Mosquito Larva, *Aëdes togoi* Theobald 138:59
Aschoff J, see Saint Paul U von
Ashida M, see Ziegler R, et al
Ashkenazi IE, see Peleg L, et al
Ashwell-Erickson S, see Hong SK, et al
Ask JA, Stene-Larsen G, Helle KB (1980) Atrial β_2-Adrenoceptors in the Trout 139:109
Ask JA, Stene-Larsen G, Helle KB (1981) Temperature Effects on the β_2-Adrenoceptors of the Trout Atrium 143:161
Atema J, see Derby DC
Atkins BJ, see Stiffler DF, et al
Atta GJ, see Buck J, et al
Atwood HL, see Bloom JW
Atwood HL, see Jacobs JR
Atwood HL, see Stephens PJ
Atwood HL, see Wiens TJ
Audesirk G (1978) Properties of Central Motor Neurons Exciting Locomotory Cilia in *Tritonia diomedea* 128:259
Audesirk G, Audesirk T (1980) Complex Mechanoreceptors in *Tritonia diomedea*. I. Responses to Mechanical and Chemical Stimuli 141:101
Audesirk G, Audesirk T (1980) Complex Mechanoreceptors in *Tritonia diomedea*. II. Neuronal Correlates of a Change in Behavioral Responsiveness 141:111
Audesirk GJ, see Audesirk TE
Audesirk T, see Audesirk G
Audesirk TE (1979) Oral Mechanoreceptors in *Tritonia diomedea*. I. Electrophysiological Properties and Location of Receptive Fields 130:71

Audesirk TE, Audesirk GJ (1979) Oral Mechanoreceptors in *Tritonia diomedea*. II. Role in Feeding 130:79
Autrum H, Linzen B (1981) A Note to Our Authors 143:1, 159
Avery P, see Brackenbury J, et al
Ayers J, Clarac F (1978) Neuromuscular Strategies Underlying Different Behavioral Acts in a Multifunctional Crustacean Leg Joint 128:81
Ayers JL Jr, Davis WJ (1978) Neuronal Control of Locomotion in the Lobster, *Homarus americanus*. III. Dynamic Organization of Walking Leg Reflexes 123:289
Ayers JL Jr, Selverston AI (1979) Monosynaptic Entrainment of an Endogenous Pacemaker Network: A Cellular Mechanism for von Holst's Magnet Effect 129:5

B

Babu KS, see Reddy GR, et al
Baby TG, Reddy SRR (1980) Arginine Metabolism in Purinotelic Animals. I. Characterization of Arginase and Absence of Other Urea Cycle Enzymes in the Lizard, *Calotes versicolor* 140:261
Bacon J, Möhl B (1983) The Tritocerebral Commissure Giant (TCG) Wind-Sensitive Interneurone in the Locust. I. Its Activity in Straight Flight 150:439
Bacon J, Tyrer M (1978) The Tritocerebral Commissure Giant (TCG): A Bimodal Interneurone in the Locust, *Schistocerca gregaria* 126:317
Bacon J, see Möhl B
Bailey SER (1981) Circannual and Circadian Rhythms in the Snail *Helix aspersa* Müller and the Photoperiodic Control of Annual Activity and Reproduction 142:89
Baker C, see Heiligenberg W, et al
Baker CL Jr (1980) Jamming Avoidance Behavior in Gymnotoid Electric Fish with Pulse-Type Discharges: Sensory Encoding for a Temporal Pattern Discrimination 136:165
Baker CL Jr (1981) Sensory Control of Pacemaker Acceleration and Deceleration in Gymnotiform Electric Fish with Pulse-Type Discharges 141:197
Baker PS (1979) Flying Locust Visual Responses in a Radial Wind Tunnel 131:39
Baker PS (1979) The Wing Movements of Flying Locusts During Steering Behaviour 131:49
Baker PS (1979) The Role of Forewing Muscles in the Control of Direction in Flying Locusts 131:59
Baker PS, Cooter RJ (1979) The Natural Flight of the Migratory Locust, *Locusta migratoria* L. I. Wing Movements 131:79
Baker PS, Cooter RJ (1979) The Natural Flight of the Migratory Locust, *Locusta migratoria* L. II. Gliding 131:89
Baker PS, Gewecke M, Cooter RJ (1981) The Natural Flight of the Migratory Locust, *Locusta migratoria* L. III. Wing-Beat Frequency, Flight Speed and Attitude 141:233
Bakker JGM, Crowe A (1982) Multicyclic Scratch Reflex Movements in the Terrapin *Pseudemys scripta elegans* 145:477
Baldaccini NE, see Ioalé P, et al
Baldwin J, Lee AK (1979) Contributions of Aerobic and Anaerobic Energy Production During Swimming in the Bivalve Mollusc *Limaria fragilis* (Family Limidae) 129:361
Baldwin J, see Seymour RS, et al
Ball EE, Hill KG (1978) Functional Development of the Auditory System of the Cricket, *Teleogryllus commodus* 127:131
Ball EE, see Field LH, et al
Ballantyne D, Rathmayer W (1981) On the Function of the Common Inhibitory Neurone in the Walking Legs of the Crab, *Eriphia spinifrons* 143:111
Ballintijn CM, Luiten PGM, Jüch PJW (1979) Respiratory Neuron Activity in the Mesencephalon, Diencephalon and Cerebellum of the Carp 133:131
Bandsholm UC, see Segura ET, et al
Bangham AD, see Hill MW, et al
Barclay RMR, see Ryan MJ, et al
Barnes WJP, Neil DM (1982) Reflex Antennal Movements in the Spiny Lobster, *Palinurus elephas*. II. Feedback and Motor Control 147:269
Barnes WJP, see Neil DM, et al
Barnett SA, Hocking WE, Wolfe JL (1978) Effects of Cold on Activity and Exploration by Wild House Mice in a Residential Maze 123:91
Barr J, see Dusenbery DB
Barrett J, Butterworth PE (1982) Carbohydrate and Lipid Catabolism in the Planarian *Polycelis nigra* 146:107
Barth FG, Bohnenberger J (1978) Lyriform Slit Sense Organ: Thresholds and Stimulus Amplitude Ranges in a Multi-Unit Mechanoreceptor 125:37
Barth FG, Geethabali (1982) Spider Vibration Receptors: Threshold Curves of Individual Slits in the Metatarsal Lyriform Organ 148:175
Barth FG, see Klärner D
Barth FG, see Speck J
Barthelemy L, see Peyraud-Waitzenegger M, et al
Barthelemy L, see Thomas S, et al
Bartholomew GA, Vleck D (1979) The Relation of Oxygen Consumption to Body Size and to Heating and Cooling in the Galapagos Marine Iguana, *Amblyrhynchus cristatus* 132:285
Bartholomew GA, see Kenagy GJ
Bartholomew GA, see Vleck D, et al
Barwig B, see Bohn H, et al
Bässler U (1977) Sense Organs in the Femur of the Stick Insect and Their Relevance to the Control of Position of the Femur-Tibia-Joint 121:99
Bässler U (1979) Effects of Crossing the Receptor Apodeme of the Femoral Chordotonal Organ on Walking, Jumping and Singing in Locusts and Grasshoppers 134:173
Bässler U, Pflüger H-J (1979) The Control-System of the Femur-Tibia-Joint of the Phasmid *Extatosoma tiaratum* and the Control of Rocking. A Contribution to the Evolution of Behaviour 132:209
Bastian J (1977) Variations in the Frequency Response of Electroreceptors Dependent on Receptor Location in Weakly Electric Fish (Gymnotoidei) with a Pulse Discharge 121:53
Bastian J (1981) Electrolocation. I. How the Electroreceptors of *Apteronotus albifrons* Code for Moving Objects and Other Electrical Stimuli 144:465
Bastian J (1981) Electrolocation. II. The Effects of Moving Objects and Other Electrical Stimuli on the Activities of Two Categories of Posterior Lateral Line Lobe Cells in *Apteronotus albifrons* 144:481
Bastian J (1982) Vision and Electroreception: Integration of Sensory Information in the Optic Tectum of the Weakly Electric Fish *Apteronotus albifrons* 147:287
Bastian J, Heiligenberg W (1980) Neural Correlates of the Jamming Avoidance Response of *Eigenmannia* 136:135
Bastian J, see Heiligenberg W
Bastian J, see Heiligenberg W, et al
Bastian J, see Watson D
Bath RN, Eddy FB (1979) Ionic and Respiratory Regulation in Rainbow Trout During Rapid Transfer to Seawater 134:351
Bath RN, see Eddy FB
Batterton CV, see Cameron JN
Baudinette RV (1978) Scaling of Heart Rate During Locomotion in Mammals 127:337
Baudinette RV, Seymour RS, Orbach J (1978) Cardiovascular Responses to Exercise in the Brush-tailed Possum 124:143
Bauer C, Rollema HS, Till HW, Braunitzer G (1980) Phosphate Binding by Llama and Camel Hemoglobin 136:67
Bauer G, see Markl J, et al
Bauer U, Dudel J, Hatt H (1981) Characteristics of Single Chemoreceptive Units Sensitive to Amino Acids and Related Substances in the Crayfish Leg 144:67
Bauer U, see Hatt H
Baust JG, see Storey KB, et al
Bauswein E (1977) Effect of Calcium on the Differentiating Operation of the Ampullary Electroreceptor in *Ictalurus nebulosus* 121:381
Bayne BL, see Zwaan A de, et al
Bayne CJ, see Thompson RJ, et al
Bazin B, see Wenning A, et al
Bazin B, see Zerbst-Boroffka I, et al
Beard M, see Arch S, et al
Bech C (1980) Body Temperature, Metabolic Rate, and Insulation in Winter and Summer Acclimated Mute Swans (*Cygnus olor*) 136:61
Bech C, Midtgård U (1981) Brain Tempera-

ture and the *rete mirabile ophthalmicum* in the Zebra Finch (*Poephila gutata*) 145:89
Bech C, Rautenberg W, May B, Johansen K (1982) Regional Blood Flow Changes in Response to Thermal Stimulation of the Brain and Spinal Cord in the Pekin Duck 147:71
Beck A, Ewert J-P (1979) Prey Selection by Toads (*Bufo bufo* L.) in Response to Configurational Stimuli Moved in the Visual Field z,y-Coordinates 129:207
Becker W (1980) Microcalorimetric Studies in *Biomphalaria glabrata*: The Influence of *Schistosoma mansoni* on the Basal Metabolism 135:101
Bedford JJ, Leader JP (1978) Hyperosmotic Readjustment of the Crab, *Hemigrapsus edwardsi* 128:147
Bedford JJ, see Leader JP
Behrens ME, Fahy JL (1981) Slow Potentials in Nonspiking Optic Nerve Fibers in the Peripheral Visual System of *Limulus* 141:239
Bekoff A, Kauer JA (1982) Neural Control of Hatching: Role of Neck Position in Turning on Hatching Leg Movements in Post-Hatching Chicks 145:497
Belaud A, see Thomas S, et al
Belknap DB, Suthers RA (1982) Brainstem Auditory Evoked Responses to Tone Bursts in the Echolocating Bat, *Rousettus* 146:283
Beneden R Van, see Palumbi SR, et al
Bennett AF, see Putnam RW
Bennett EL, see Davies PMC
Bennett MF, Pomeroy GC (1982) Circadian Variations in the Differential Blood Counts of Mice Under Constant (LL) and Alternating (LD) Light Periods 149:307
Bennett MF, Reap LE (1978) Photoperiod, Stress and the Distribution of Leukocytes in the Peripheral Blood of *Notophthalmus viridescens* 125:205
Bennett MVL, see Szamier RB
Bennett MVL, see Teeter JH
Bennett MVL, see Teeter JH, et al
Bennett RR (1983) Circadian Rhythm of Visual Sensitivity in *Manduca sexta* and Its Development from an Ultradian Rhythm 150:165
Bennett RR, see White RH, et al
Benshalom G, Dagan D (1981) Electrophysiological Analysis of the Temperature-Sensitive Paralytic *Drosophila* Mutant, *para*^{ts} 144:409
Benson JA (1981) Synaptic and Regenerative Responses of Cardiac Muscle Fibres in the Crab, *Portunus sanguinolentus* 143:349
Benvenuti S, see Papi F, et al
Benvenuti S, see Waldvogel JA, et al
Benzinger I, see Gwinner E
Berenbeim JA, see Stein PSG, et al
Beres LS, Pierce SK (1981) The Effects of Salinity Stress on the Electrophysiological Properties of *Mya arenaria* Neurons 144:165
Berger MS, see Lynch GR, et al
Berlind A (1982) Spontaneous and Repetitive Driver Potentials in Crab Cardiac Ganglion Neurons 149:263
Bern HA, see Foskett JK, et al
Bern HA, see Woo NYS
Bernard GD, Stavenga DG (1979) Spectral Sensitivities of Retinular Cells Measured in Intact, Living Flies by an Optical Method 134:95
Bernard GD, Wehner R (1980) Intracellular Optical Physiology of the Bee's Eye. I. Spectral Sensitivity 137:193
Bernard GD, see Stavenga DG, et al
Bernard GD, see Wehner R
Bernard RA, see Samanen DW
Bernstein MH, Sandoval I, Curtis MB, Hudson DM (1979) Brain Temperature in Pigeons: Effects of Anterior Respiratory Bypass 129:115
Berry MS, Pentreath VW (1979) Electrotonic Coupling Among Postsynaptic Neurons of the Characterised Dopamine Neurons in *Planorbis* 131:267
Bessonov BI, see Butsuk SV
Best RC (1982) Thermoregulation in Resting and Active Polar Bears 146:63
Beydon P, Mauchamp B, Lhonoré J, Bouthier A, Lafont R (1980) The Epidermal Cell Cycle During the Last Larval Instar of *Pieris brassicae* (Lepidoptera). II. Endocrine Control of Xanthommatin Content 136:21
Beydon P, see Lhonoré J, et al
Beyenbach KW, see Williams JC Jr
Bicker G, Davis WJ, Matera EM (1982) Chemoreception and Mechanoreception in the Gastropod Mollusc *Pleurobranchaea californica*. II. Neuroanatomical and Intracellular Analysis of Afferent Pathways 149:235
Bicker G, Davis WJ, Matera EM, Kovac MP, StormoGipson DJ (1982) Chemoreception and Mechanoreception in the Gastropod Mollusc *Pleurobranchaea californica*. I. Extracellular Analysis of Afferent Pathways 149:221
Bicker G, Reichert H (1978) Visual Learning in a Photoreceptor Degeneration Mutant of *Drosophila melanogaster* 127:29
Bicker G, see Reichert H
Bickler PE, see Shoemaker VH
Bijpost SCA, see Maes FW
Bilo D, see Nachtigall W
Binkley S, Reilly K, Hernandez T (1980) N-Acetyltransferase in the Chick Retina. II. Interactions of the Eyes and Pineal Gland in Response to Light 140:181
Binkley S, Reilly KB, Hryshchyshyn M (1980) N-Acetyltransferase in the Chick Retina. I. Circadian Rhythms Controlled by Environmental Lighting Are Similar to Those in the Pineal Gland 139:103
Bintz GL, Strand CE (1983) Nitrogen Catabolism During Starvation and Starvation with Water Deprivation in Richardson's Ground Squirrels 149:565
Birchard GF, see Kilgore DL Jr, et al
Bischof HJ, see Horn E
Bishop LG, see Eckert H
Bittner GD, Traut DL (1978) Growth of Crustacean Muscles and Muscle Fibers 124:277
Black KR, see Mote MI, et al
Blakeslee B, see Jacobs GH, et al
Blasdel GG, see Knudsen EI, et al
Bleckmann H (1980) Reaction Time and Stimulus Frequency in Prey Localization in the Surface-Feeding Fish *Aplocheilus lineatus* 140:163
Bleckmann H, Schwartz E (1982) The Functional Significance of Frequency Modulation Within a Wave Train for Prey Localization in the Surface-Feeding Fish *Aplocheilus lineatus* (Cyprinodontidae) 145:331
Bleckmann H, Waldner I, Schwartz E (1981) Frequency Discrimination of the Surface-Feeding Fish *Aplocheilus lineatus* – A Prerequisite for Prey Localization? 143:485
Blest AD, Hardie RC, McIntyre P, Williams DS (1981) The Spectral Sensitivities of Identified Receptors and the Function of Retinal Tiering in the Principal Eyes of a Jumping Spider 145:227
Blest AD, see Couet HG de
Blest AD, see Laughlin S, et al
Block GD, Roberts MH (1981) Circadian Pacemaker in the *Bursatella* Eye: Properties of the Rhythm and Its Effect on Locomotor Behavior 142:403
Block GD, see Fricke RA, et al
Blondeau J, Heisenberg M (1982) The Three-Dimensional Optomotor Torque System of *Drosophila melanogaster*. Studies on Wildtype and the Mutant *optomotor-blind*^{H31} 145:321
Bloom JW, Atwood HL (1980) Effects of Altered Sensory Experience on the Responsiveness of the Locust Descending Contralateral Movement Detector Neuron 135:191
Bloom JW, Atwood HL (1981) Reversible Ultrastructural Changes in the Rhabdom of the Locust Eye Are Induced by Long Term Light Deprivation 144:357
Bobier WR, see Sivak JG, et al
Bock GR, see Saunders JC, et al
Bodznick D (1978) Water Source Preference and Lakeward Migration of Sockeye Salmon Fry (*Oncorhynchus nerka*) 127:139
Bodznick D (1978) Characterization of Olfactory Bulb Units of Sockeye Salmon with Behaviorally Relevant Stimuli 127:147
Bodznick D (1978) Calcium Ion: An Odorant for Natural Water Discriminations and the Migratory Behavior of Sockeye Salmon 127:157
Boeckh J, Boeckh V (1979) Threshold and Odor Specificity of Pheromone-Sensitive Neurons in the Deutocerebrum of *Antheraea pernyi* and *A. polyphemus* (Saturnidae) 132:235

Boeckh J, see Burrows M, et al
Boeckh V, see Boeckh J
Boggs DF, Kilgore DL Jr (1983) Ventilatory Responses of the Burrowing Owl and Bobwhite to Hypercarbia and Hypoxia 149:527
Boggs DF, see Kilgore DL Jr, et al
Bohn B, see Bohn H, et al
Bohn H, Barwig B, Bohn B (1981) Immunochemical Analysis of Hemolymph Clotting in the Insect *Leucophaea maderae* (Blattaria) 143:169
Bohnenberger J (1981) Matched Transfer Characteristics of Single Units in a Compound Slit Sense Organ 142:391
Bohnenberger J, see Barth FG
Bohnenberger J, see Seyfarth E-A, et al
Bohr DF, see Webb RC
Bolnick DA, see Sillman AJ, et al
Bonaventura C, see Weber RE, et al
Bonaventura J, see Weber RE, et al
Bone Q (1981) The Relation Between the Form of the Action Potential and Contractions in the Subumbrellar Myoepithelium of *Chelophyes* (Coelenterata: Siphonophora) 144:555
Bone Q, see Chain BM, et al
Bonke D, Scheich H, Langner G (1979) Responsiveness of Units in the Auditory Neostriatum of the Guinea Fowl (*Numida meleagris*) to Species-Specific Calls and Synthetic Stimuli. I. Tonotopy and Functional Zones of Field L 132:243
Bonke D, see Scheich H, et al
Bont AMT de, see Zwaan A de, et al
Booth CE, McMahon BR, Pinder AW (1982) Oxygen Uptake and the Potentiating Effects of Increased Hemolymph Lactate on Oxygen Transport During Exercise in the Blue Crab, *Callinectes sapidus* 148:111
Boppré M, Petty RL, Schneider D, Meinwald J (1978) Behaviorally Mediated Contacts Between Scent Organs: Another Prerequisite for Pheromone Production in *Danaus chrysippus* Males (Lepidoptera) 126:97
Borbély AA, Neuhaus HU (1978) Daily Pattern of Sleep, Motor Activity and Feeding in the Rat: Effects of Regular and Gradually Extended Photoperiods 124:1
Borbély AA, Neuhaus HU (1978) Circadian Rhythm of Sleep and Motor Activity in the Rat During Skeleton Photoperiod, Continuous Darkness and Continuous Light 128:37
Borbély AA, Neuhaus HU (1979) Sleep-Deprivation: Effects on Sleep and EEG in the Rat 133:71
Borchers H-W, Burghagen H, Ewert J-P (1978) Key Stimuli of Prey for Toads (*Bufo bufo* L.).: Configuration and Movement Patterns 128:189
Borchers H-W, Ewert J-P (1978) Eye Closure in Toads (*Bufo bufo* L.) Does Not Produce Off Responses in Retinal On-Off Ganglion Cells: A Question of Efferent Commands 125:301
Borchers H-W, see Ewert J-P, et al
Borst A, Heisenberg M (1982) Osmotropotaxis in *Drosophila melanogaster* 147:479
Borut A, see Haim A
Boshes M, see Mrosovsky N, et al
Boulos Z, Rusak B (1982) Circadian Phase Response Curves for Dark Pulses in the Hamster 146:411
Boulos Z, Terman M (1979) Splitting of Circadian Rhythms in the Rat 134:75
Bouthier A, see Beydon P, et al
Bouthier A, see Lhonoré J, et al
Bouverot P, Douguet D, Sébert P (1979) Role of the Arterial Chemoreceptors in Ventilatory and Circulatory Adjustment to Hypoxia in Awake Pekin Ducks 133:177
Bowdan E (1978) Walking and Rowing in the Water Strider, *Gerris remigis*. I. A Cinematographic Analysis of Walking 123:43
Bowdan E (1978) Walking and Rowing in the Water Strider, *Gerris remigis*. II. Muscle Activity Associated with Slow and Rapid Mesothoracic Leg Movement 123:51
Bowerman RF, Burrows M (1980) The Morphology and Physiology of Some Walking Leg Motor Neurones in a Scorpion 140:31
Boyan GS (1979) Directional Responses to Sound in the Central Nervous System of the Cricket *Teleogryllus commodus* (Orthoptera: Gryllidae). I. Ascending Interneurons 130:137
Boyan GS (1979) Directional Responses to Sound in the Central Nervous System of the Cricket *Teleogryllus commodus* (Orthoptera: Gryllidae). II. A Descending Interneuron 130:151
Boyan GS (1980) Auditory Neurones in the Brain of the Cricket *Gryllus bimaculatus* (De Geer) 140:81
Boyan GS (1981) Two-Tone Suppression of an Identified Auditory Neurone in the Brain of the Cricket *Gryllus bimaculatus* (De Geer) 144:117
Boyan GS, see Hill KG
Brace RC, Quicke DLJ (1981) Activity Patterns in Radular Retractor Motoneurones of the Snail, *Planorbarius* 142:259
Brackenbury J, Avery P, Gleeson M (1981) Respiratory Evaporation in Panting Fowl: Partition Between the Respiratory and Buccopharyngeal Pumps 145:63
Bradshaw SD, see Rice GE
Brams P, see Gesser H, et al
Brannon EL, see Quinn TP
Brauer de Eggert H, see Loewe R
Braun BA, see Jackson DC
Braunitzer G, see Bauer C, et al
Breer H (1981) Comparative Studies on Cholinergic Activities in the Central Nervous System of *Locusta migratoria* 141:271
Brenowitz EA (1982) The Active Space of Red-Winged Blackbird Song 147:511
Brenzinger M, see Markl J, et al
Bretschneider F, Peters RC, Peele PH, Dorresteijn A (1980) Functioning of Catfish Electroreceptors: Statistical Distribution of Sensitivity and Fluctuations of Spontaneous Activity 137:273
Brewer KJ, McKeown BA (1980) Prolactin Regulation in the Coho Salmon, *Oncorhynchus kisutch* 140:217
Brick RW, Ahearn GA (1978) Lysine Transport across the Mucosal Border of the Perfused Midgut in the Freshwater Shrimp, *Macrobrachium rosenbergii* 124:169
Bricout-Berthout A, Caston J (1982) Responses of Afferent and Efferent Neurons to Auditory Inputs in the Vestibular Nerve of the Frog 147:305
Bridges CR, see Burnett LE
Brittain T, see Wells RMG, et al
Brix O, Lykkeboe G, Johansen K (1979) Reversed Bohr and Root Shifts in Hemocyanin of the Marine Prosobranch, *Buccinum undatum*: Adaptations to a Periodically Hypoxic Habitat 129:97
Broda H, see Taylor W, et al
Bronstein A, see Segura ET, et al
Brouard MO, see Ghidalia W, et al
Brown AI, see Papi F, et al
Brown HR, Ilyinsky OB (1978) The Ampullae of Lorenzini in the Magnetic Field 126:333
Brown JE, see Pinto LH
Brown PE, Grinnell AD, Harrison JB (1978) The Development of Hearing in the Pallid Bat, *Antrozous pallidus* 126:169
Brown PK, see White RH, et al
Brown PS, Brown SC, Frye BE (1979) Effects of Hypophysectomy and Thyroidectomy on Salt Balance in the Plethodontid Salamanders, *Desmognathus fuscus* and *Desmognathus monticola* 132:357
Brown SC, see Brown PS, et al
Brown SK, Sherwood DN (1981) Vascularization of the Crayfish Abdominal Nerve Cord 143:93
Brown TH, Newby NA (1980) Quantal Nature of Neuromuscular Transmission in Crayfish Phasic Abdominal Flexors 136:89
Brown TH, Newby NA (1980) Erratum 139:96
Brownell P, Farley RD (1979) Detection of Vibrations in Sand by Tarsal Sense Organs of the Nocturnal Scorpion, *Paruroctonus mesaensis* 131:23
Brownell P, Farley RD (1979) Orientation to Vibrations in Sand by the Nocturnal Scorpion *Paruroctonus mesaensis*: Mechanism of Target Localization 131:31
Bruner J, see Zucker RS
Brzoska J, Obert H-J (1980) Acoustic Signals Influencing the Hormone Production of the Testes in the Grass Frog 140:25
Bucher TL (1981) Oxygen Consumption,

Ventilation and Respiratory Heat Loss in a Parrot, *Bolborhynchus lineola*, in Relation to Ambient Temperature 142:479
Buchner E, see Pick B †
Buck E, see Buck J, et al
Buck J, Buck E, Case JF, Hanson FE (1981) Control of Flashing in Fireflies. V. Pacemaker Synchronization in *Pteroptyx cribellata* 144:287
Buck J, Buck E, Hanson FE, Case JF, Mets L, Atta GJ (1981) Control of Flashing in Fireflies. IV. Free Run Pacemaking in a Synchronic *Pteroptyx* 144:277
Bückmann D (1979) Morphological Colour Change (2): The Effects of Total and Partial Blinding on Epidermal Ommochrome Content in the Stick Insect, *Carausius morosus* Br. 130:331
Bullock TH, Corwin JT (1979) Acoustic Evoked Activity in the Brain in Sharks 129:223
Bullock TH, Northcutt RG (1982) A New Electroreceptive Teleost: *Xenomystus nigri* (Osteoglossiformes: Notopteridae) 148:345
Bullock TH, O'Shea TJ, McClune MC (1982) Auditory Evoked Potentials in the West Indian Manatee (Sirenia: *Trichechus manatus*) 148:547
Bullock TH, see Tong SL
Bülthoff H, Götz KG, Herre M (1982) Recurrent Inversion of Visual Orientation in the Walking Fly, *Drosophila melanogaster* 148:471
Burggren WW, Glass ML, Johansen K (1978) Intrapulmonary Variation of Gas Partial Pressures and Ventilation Inequalities in Chelonian Reptiles 126:203
Burggren WW, Wood SC (1981) Respiration and Acid-Base Balance in the Salamander, *Ambystoma tigrinum*: Influence of Temperature Acclimation and Metamorphosis 144:241
Burghagen H, see Borchers H-W, et al
Burghagen H, see Ewert J-P, et al
Burnett LE, Bridges CR (1981) The Physiological Properties and Function of Ventilatory Pauses in the Crab *Cancer pagurus* 145:81
Burnett LE, Johansen K (1981) The Role of Branchial Ventilation in Hemolymph Acid-Base Changes in the Shore Crab *Carcinus maenas* During Hypoxia 141:489
Burns MD, see Neil DM, et al
Burns MD, see Theophilidis G
Burns MD, see Williamson R
Burovina IV, Gribakin FG, Petrosyan AM, Pivovarova NB, Pogorelov AG, Polyanovsky AD (1978) Ultrastructural Localization of Potassium and Calcium in an Insect Ommatidium as Demonstrated by X-Ray Microanalysis 127:245
Burr AH (1979) Analysis of Phototaxis in Nematodes Using Directional Statistics 134:85
Burrows M, Boeckh J, Esslen J (1982) Physiological and Morphological Properties of Interneurones in the Deutocerebrum of Male Cockroaches which Respond to Female Pheromone 145:447
Burrows M, see Bowerman RF
Burt LD, see Stiffler DF, et al
Burton FA, see Land MF, et al
Bush BMH, see Cannone A
Bush BMH, see Cannone AJ
Bush BMH, see Simmers AJ
Bushnell PG, Lutz PL, Stefensen JF, Oikari A, Gruber SH (1982) Increases in Arterial Blood Oxygen During Exercise in the Lemon Shark (*Negaprion brevirostris*) 147:41
Butler PJ, Taylor EW, Capra MF, Davison W (1978) The Effect of Hypoxia on the Levels of Circulating Catecholamines in the Dogfish *Scyliorhinus canicula* 127:325
Butler PJ, Taylor EW, Davison W (1979) The Effect of Long Term, Moderate Hypoxia on Acid-Base Balance, Plasma Catecholamines and Possible Anaerobic End Products in the Unrestrained Dogfish *Scyliorhinus canicula* 132:297
Butler PJ, see Short S, et al
Butler PJ, see Taylor EW
Butler PJ, see Taylor EW, et al
Butsuk SV, Bessonov BI (1981) Direct Current Electric Field in Some Teleost Species: Effect of Medium Salinity 141:277
Butterworth PE, see Barrett J
Buwalda RJA, Schuijf A, Hawkins AD (1983) Discrimination by the Cod of Sounds from Opposing Directions 150:175

C

Caillère L, see Weber T
Caird DM (1978) A Simple Cerebellar System: The Lateral Line Lobe of the Goldfish 127:61
Calabrese RL (1977) The Neural Control of Alternate Heartbeat Coordination States in the Leech, *Hirudo medicinalis* 122:111
Calvo AV, see Chappell MA, et al
Cameron JN (1978) NaCl Balance in Blue Crabs, *Callinectes sapidus*, in Fresh Water 123:127
Cameron JN (1978) Effects of Hypercapnia on Blood Acid-Base Status, NaCl Fluxes, and Trans-Gill Potential in Freshwater Blue Crabs, *Callinectes sapidus* 123:137
Cameron JN (1979) Effects of Inhibitors on Ion Fluxes, Trans-Gill Potential and pH Regulation in Freshwater Blue Crabs, *Callinectes sapidus* (Rathbun) 133:219
Cameron JN, Batterton CV (1978) Antennal Gland Function in the Freshwater Blue Crab, *Callinectes sapidus*: Water, Electrolyte, Acid-Base and Ammonia Excretion 123:143
Cameron JN, see Kormanik GA
Camhi JM, Nolen TG (1981) Properties of the Escape System of Cockroaches During Walking 142:339
Camhi JM, Tom W (1978) The Escape Behavior of the Cockroach *Periplaneta americana*. I. Turning Response to Wind Puffs 128:193
Camhi JM, Tom W, Volman S (1978) The Escape Behavior of the Cockroach *Periplaneta americana*. II. Detection of Natural Predators by Air Displacement 128:203
Camhi JM, see Dagan D
Camhi JM, see Plummer MR
Camhi JM, see Ritzmann RE
Camhi JM, see Vardi N
Camhi JM, see Westin J, et al
Campbell G, see Donald J
Campbell GS, see Walsberg GE, et al
Campbell JW, Vorhaben JE (1979) The Purine Nucleotide Cycle in *Helix* Hepatopancreas 129:137
Campbell JW, see Sollock RL, et al
Campenhausen C von, Riess I, Weissert R (1981) Detection of Stationary Objects by the Blind Cave Fish *Anoptichthys jordani* (Characidae) 143:369
Campenhausen C von, see Weissert R
Cannone AJ, Bush BMH (1981) Reflexes Mediated by Non-Impulsive Afferent Neurones of Thoracic-Coxal Muscle Receptor Organs in the Crab, *Carcinus maenas*. III. Positive Feedback to the Receptor Muscle 142:103
Cannone AJ, Bush BMH (1981) Reflexes Mediated by Non-Impulsive Afferent Neurones of Thoracic-Coxal Muscle Receptor Organs in the Crab, *Carcinus maenas*. IV. Motor Activation of the Receptor Muscle 142:113
Cannone A, Bush BMH (1982) Dual Reflex Motor Control of Non-Spiking Crab Muscle Receptor. I. Positive Feedback Tonically Reduced and Dynamically Stabilized by Concurrent Inhibition of Rm1 148:365
Capra MF, see Butler PJ, et al
Capranica RR, see Ehret G
Capranica RR, see Moffat AJM
Capranica RR, see Narins PM
Capranica RR, see Rheinlaender J, et al
Caprio J (1978) Olfaction and Taste in the Channel Catfish: An Electrophysiological Study of the Responses to Amino Acids and Derivatives 123:357
Caprio J, see Davenport CJ
Caprio J, see Kanwal JS
Carefoot TH, see Thompson RJ, et al
Carey C, Dawson WR, Maxwell LC, Faulkner JA (1978) Seasonal Acclimatization to Temperature in Cardueline Finches. II. Changes in Body Composition and Mass in Relation to Season and Acute Cold Stress 125:101
Carlson AD, see Christensen TA
Cary G, see Collins BG, et al
Casaday GB, Hoy RR (1977) Auditory Interneurons in the Cricket *Teleogryllus oceanicus*: Physiological and Anatomical Properties 121:1
Case JF, see Buck J, et al

Case JF, see Widder EA
Castellini MA, Somero GN (1981) Buffering Capacity of Vertebrate Muscle: Correlations with Potentials for Anaerobic Function 143:191
Castellini MA, see Kooyman GL, et al
Caston J, Gribenski A (1979) Innervation of a Vestibular Receptor in the Frog: Existence of a Feedback Loop? 133:63
Caston J, Gribenski A (1979) Interrelations Between Auditory and Vestibular Receptors in the Frog's Labyrinth 133:141
Caston J, see Bricout-Berthout A
Chain BM, Bone Q, Anderson PAV (1981) Electrophysiology of a Myoid Epithelium in *Chelophyes* (Coelenterata: Siphonophora) 143:329
Chandrashekaran MK, see Subbaraj R
Chapelle S, see Gilles-Baillien M, et al
Chapman KM, Mosinger JL, Duckrow RB (1979) The Role of Distributed Viscoelastic Coupling in Sensory Adaptation in an Insect Mechanoreceptor 131:1
Chapman RM, see Lall AB, et al
Chappell MA, Calvo AV, Heller HC (1978) Hypothalamic Thermosensitivity and Adaptations for Heat-Storage Behavior in Three Species of Chipmunks (*Eutamias*) from Different Thermal Environment 125:175
Chappell RL, see Mobbs PG, et al
Chappell RL, see Patterson JA
Chappell RL, see Stavenga DG, et al
Chapple WD (1977) Diversity of Muscle Fibers in the Abdominal Dorsal Superficial Muscles of the Hermit Crab, *Pagurus pollicarus* 121:395
Chapple WD (1977) Motoneurons Innervating the Dorsal Superficial Muscles of the Hermit Crab, *Pagurus pollicarus*, and Their Reflex Asymmetry 121:413
Chase R (1982) The Olfactory Sensitivity of Snails, *Achatina fulica* 148:225
Chase R, Croll RP (1981) Tentacular Function in Snail Olfactory Orientation 143:357
Chase R, see Croll RP
Chasserat C, Clarac F (1980) Interlimb Coordinating Factors During Driven Walking in Crustacea. A Comparative Study of Absolute and Relative Coordination 139:293
Cherksey BD, see Mendelsohn SA, et al
Chiba Y, see Tomioka K
Chichibu S, see Hoshimiya N, et al
Childs JE, see Simmons JA, et al
Chippendale GM, see Mane SD
Chiu KW, see Wong CC
Christensen TA, Carlson AD (1982) The Neurophysiology of Larval Firefly Luminescence: Direct Activation Through Four Bifurcating (DUM) Neurons 148:503
Claiborne JB, Evans DH (1980) The Isolated, Perfused Head of the Marine Teleost Fish, *Myoxocephalus octodecimspinosus*: Hemodynamic Effects of Epinephrine 138:79
Claiborne JB, see Oduleye SO, et al
Clarac F, see Ayers J
Clarac F, see Chasserat C
Clarac F, see Vedel JP
Clark JV (1979) The Neuronal Basis of Rhythmic Pumping in *Balanus hameri* 130:183
Clark JV, Dorsett DA (1978) Anatomy and Physiology of Proprioceptors in the Cirri of *Balanus hameri* 123:229
Clark NB, see Laverty G
Clemens E, see Skadhauge E, et al
Cobbs JS, Pinsker HM (1982) Role of Bag Cells in Egg Deposition of *Aplysia brasiliana*. I. Comparison of Normal and Elicited Behaviors 147:523
Cobbs JS, Pinsker HM (1982) Role of Bag Cells in Egg Deposition of *Aplysia brasiliana*. II. Contribution of Egg Movement to Elicited Behaviors 147:537
Coirault Y, see Ghidalia W, et al
Čokl A (1983) Functional Properties of Vibroreceptors in the Legs of *Nezara viridula* (L) (Heteroptera, Pentatomidae) 150:261
Čokl A, Amon T (1980) Vibratory Interneurons in the Central Nervous System of *Nezara viridula* L. (Pentatomidae, Heteroptera) 139:87
Coles RB, Aitkin LM (1979) The Response Properties of Auditory Neurones in the Midbrain of the Domestic Fowl (*Gallus gallus*) to Monaural and Binaural Stimuli 134:241
Colin DA, Kirsch R, Leray C (1979) Haemodynamic Effects of Adenosine on Gills of the Trout (*Salmo gairdneri*) 130:325
Colin DA, see Leray C, et al
Collett T, see Lock A
Collett TS (1980) Some Operating Rules for the Optomotor System of a Hoverfly During Voluntary Flight 138:271
Collett TS (1980) Angular Tracking and the Optomotor Response. An Analysis of Visual Reflex Interaction in a Hoverfly 140:145
Collett TS (1982) Do Toads Plan Routes? A Study of the Detour Behaviour of *Bufo viridis* 146:261
Collett TS, Land MF (1978) How Hoverflies Compute Interception Courses 125:191
Collins BG, Cary G, Packard G (1980) Energy Assimilation, Expenditure and Storage by the Brown Honeyeater, *Lichmera indistincta* 137:157
Collins JS, see Goldsmith TH, et al
Collis CS (1979) Melanophore Potentials of the Chromatically Intact Spinal Stoneloach (*Noemacheilus barbatulus* L.) Following Adaptation to Varying Backgrounds 131:13
Comer C, Grobstein P (1981) Tactually Elicited Prey Acquisition Behavior in the Frog, *Rana pipiens*, and a Comparison with Visually Elicited Behavior 142:141
Comer C, Grobstein P (1981) Involvement of Midbrain Structures in Tactually and Visually Elicited Prey Acquisition Behavior in the Frog, *Rana pipiens* 142:151
Comer C, Grobstein P (1981) Organization of Sensory Inputs to the Midbrain of the Frog, *Rana pipiens* 142:161
Conner RL, see Scheuch GC, et al
Coombe PE (1981) Wavelength Specific Behaviour of the Whitefly *Trialeurodes vaporariorum* (Homoptera: Aleyrodidae) 144:83
Coombs S, Popper AN (1979) Hearing Differences Among Hawaiian Squirrelfish (Family Holocentridae) Related to Differences in the Peripheral Auditory System 132:203
Cooter RJ (1979) Visually Induced Yaw Movements in the Flying Locust, *Schistocerca gregaria* (Forsk.) 131:67
Cooter RJ, see Baker PS
Cooter RJ, see Baker PS, et al
Coprean D, see Wittenberger C
Corbière-Tichané G, see Loftus R
Corwin JT (1981) Peripheral Auditory Physiology in the Lemon Shark: Evidence of Parallel Otolithic and Non-Otolithic Sound Detection 142:379
Corwin JT, see Bullock TH
Cosens D, LeBlanc N (1980) Frequency Dependent Flicker Response Enhancement in the Lamina Ganglionaris of *Drosophila* 137:341
Cossins AR, see Hoyland J, et al
Couet HG de, Blest AD (1982) The Retinal Acid Phosphatase of a Crab, *Leptograpsus*: Characterisation, and Relation to the Cyclical Turnover of Photoreceptor Membrane 149:353
Cowan FBM (1981) Effects of Salt Loading on Salt Gland Function in the Euryhaline Turtle, *Malaclemys terrapin* 145:101
Crass MF III, see Strickland ML, et al
Crawshaw LI, Lemons DE, Parmer M, Messing JM (1982) Behavioral and Metabolic Aspects of Low Temperature Dormancy in the Brown Bullhead, *Ictalurus nebulosus* 148:41
Crescitelli F (1980) The Two Visual Pigments of the Gecko: The Labile Behavior 138:121
Croll RP, Chase R (1980) Plasticity of Olfactory Orientation to Foods in the Snail *Achatina fulica* 136:267
Croll RP, Davis WJ (1981) Motor Program Switching in *Pleurobranchaea*. I. Behavioural and Electromyographic Study of Ingestion and Egestion in Intact Specimens 145:277
Croll RP, Davis WJ (1982) Motor Program Switching in *Pleurobranchaea*. II. Ingestion and Egestion in the Reduced Preparation 147:143
Croll RP, see Chase R
Cronin TW, see Forward RB Jr
Crowe A, see Bakker JGM
Crowe A, see Valk-Fai T
Cumming RB, see Shetty AS, et al

Cummings JW (1979) Physiological and Biochemical Adaptations to Training in *Rana pipiens* 134:345
Cummins D, Goldsmith TH (1981) Cellular Identification of the Violet Receptor in the Crayfish Eye 142:199
Curtis MB, see Bernstein MH, et al

D

Daan S, Slopsema S (1978) Short-Term Rhythms in Foraging Behaviour of the Common Vole, *Microtus arvalis* 127:215
Dagan D, Camhi JM (1979) Responses to Wind Recorded from the Cercal Nerve of the Cockroach *Periplaneta americana*. II. Directional Selectivity of the Sensory Neurons Innervating Single Columns of Filiform Hairs 133:103
Dagan D, Lecker S, Margolin Y, Sarne Y (1982) Insect Mechano-Sensory System: Development of Biochemical and Electrophysiological Properties in Absence of External Activation 149:277
Dagan D, Pratt H, Margolin Y (1983) Post Activity Effects in Mechanoreceptor Afferents of the Cockroach 150:121
Dagan D, Sarne Y (1978) Evidence for the Cholinergic Nature of Cockroach Giant Fibers: Use of Specific Degeneration 126:157
Dagan D, Volman S (1982) Sensory Basis for Directional Wind Detection in First Instar Cockroaches, *Periplaneta americana* 147:471
Dagan D, see Benshalom G
D'Alessio G, Donato A Di, Jaffé K, Maldonado H, Zabala NA (1982) Arginine and Memory Consolidation in Praying Mantis 147:231
Daley DL, Delcomyn F (1980) Modulation of the Excitability of Cockroach Giant Interneurons During Walking. I. Simultaneous Excitation and Inhibiton 138:231
Daley DL, Delcomyn F (1980) Modulation of the Excitability of Cockroach Giant Interneurons During Walking. II. Central and Peripheral Components 138:241
Daley DL, see Delcomyn F
Dambach M, see Kämper G
Davenport CJ, Caprio J (1982) Taste and Tactile Recordings from the Ramus Recurrens Facialis Innervating Flank Taste Buds in the Catfish 147:217
David CT (1982) Compensation for Height in the Control of Groundspeed by *Drosophila* in a New, 'Barber's Pole' Wind Tunnel 147:485
Davies PMC, Bennett EL (1981) Non-Acclimatory Latitude-Dependent Metabolic Adaptation to Temperature in Juvenile Natricine Snakes 142:489
Davis FC, Menaker M (1981) Development of the Mouse Circadian Pacemaker: Independence from Environmental Cycles 143:527
Davis RW, see Kooyman GL, et al
Davis WJ, Villet J, Lee D, Rigler M, Gillette R, Prince E (1980) Selective and Differential Avoidance Learning in the Feeding and Withdrawal Behavior of *Pleurobranchaea californica* 138:157
Davis WJ, see Ayers JL Jr
Davis WJ, see Bicker G, et al
Davis WJ, see Croll RP
Davis WJ, see Gillette R, et al
Davis WJ, see Kovac MP
Davison W, see Butler PJ, et al
Dawson TJ, Needham AD (1981) Cardiovascular Characteristics of Two Resting Marsupials: An Insight into the Cardio-Respiratory Allometry of Marsupials 145:95
Dawson TJ, see Degabriele R
Dawson WR, see Carey C, et al
Daxboeck C, see Farrell AP, et al
Dean J (1980) Effect of Thermal and Chemical Components of Bombardier Beetle Chemical Defense: Glossopharyngeal Response in Two Species of Toads (*Bufo americanus, B. marinus*) 135:51
Dean J (1980) Encounters Between Bombardier Beetles and Two Species of Toads (*Bufo americanus, B. marinus*): Speed of Prey-Capture Does Not Determine Success 135:41
Dean J, Wendler G (1982) Stick Insects Walking on a Wheel: Perturbations Induced by Obstruction of Leg Protraction 148:195
Decker H, see Angersbach D
Dedwylder RD II, see Young SR, et al
deFur PL, see McMahon B, et al
Degabriele R, Dawson TJ (1979) Metabolism and Heat Balance in an Arboreal Marsupial, the Koala (*Phascolarctos cinereus*) 134:293
Degani G (1981) Salinity Tolerance and Osmoregulation in *Salamandra salamandra* (L.) from Different Populations 145:133
Degn HJ, see Miller LA
Degnan KJ, see Mendelsohn SA, et al
deGraw WA, Kern MD, King JR (1979) Seasonal Changes in the Blood Composition of Captive and Free-living White-crowned Sparrows 129:151
Deitmer JW (1981) Voltage and Time Characteristics of the Potassium Mechanoreceptor Current in the Ciliate *Stylonychia* 141:173
Dejours P, Armand J (1983) Acid-Base Balance of Crayfish Hemolymph: Effects of Simultaneous Changes of Ambient Temperature and Water Oxygenation 149:463
Dejours P, see Massabuau J-C, et al
Delcomyn F (1983) Activity and Structure of Movement-Signalling (Corollary Discharge) Interneurons in a Cockroach 150:185
Delcomyn F, Daley DL (1979) Central Excitation of Cockroach Giant Interneurons During Walking 130:39
Delcomyn F, see Daley DL
Delius JD, see Emmerton J
Delius JD, see Sieland M, et al
Demong NJ, see Wiltschko W, et al
Denia A, Lau CGY, Kim YS, Honrubia V (1979) Static Cervical-Ocular Reflex and Optokinetic Reflex Interaction in Rabbits 134:11
Denny RM, see Saunders JC, et al
Derby DC, Atema J (1982) Narrow-Spectrum Chemoreceptor Cells in the Walking Legs of the Lobster *Homarus americanus*: Taste Specialists 146:181
Deutsch H, Hammel HT, Simon E, Simon-Oppermann C (1979) Osmolality and Volume Factors in Salt Gland Control of Pekin Ducks After Adaptation to Chronic Salt Loading 129:301
DeVoe RD (1980) Movement Sensitivities of Cells in the Fly's Medulla 138:93
DeVoe RD, Kaiser W, Ohm J, Stone LS (1982) Horizontal Movement Detectors of Honeybees: Directionally-Selective Visual Neurons in the Lobula and Brain 147:155
Dickinson PS (1979) Homologous Neurons Control Movements of Diverse Gill Types in Nudibranch Molluscs 131:277
Dickinson PS (1980) Gill Control in the Notaspidean *Pleurobranchaea* and Possible Homologies with Nudibranchs 139:11
Dickinson PS (1980) Neuronal Control of Gills in Diverse *Aplysia* Species: Conservative Evolution 139:17
Diecke FPJ, Stout MA (1981) Calcium Distribution and Transport in Myelinated Nerve 141:319
Dieringer N, Koester J, Weiss KR (1978) Adaptive Changes in Heart Rate of *Aplysia californica* 123:11
Dietz TH, Graves SY (1981) Sodium Influx in Isolated Gills of the Freshwater Mussel, *Ligumia subrostrata* 143:185
Dittami J, see Gwinner E
Dobbe F, see Thillart G van den, et al
Dobbe F, see Waarde A van, et al
Dobson GP, see Seymour RS, et al
Dodd C, see Young RE, et al
Donald J, Campbell G (1982) A Comparative Study of the Adrenergic Innervation of the Teleost Heart 147:85
Donato A Di, see D'Alessio G, et al
Doneen BA (1981) Effects of Adaptation to Sea Water, 170% Sea Water and to Fresh Water on Activities and Subcellular Distribution of Branchial $Na^+ - K^+$-ATPase, Low- and High Affinity Ca^{++}-ATPase, and Ouabain-Insensitive ATPase in *Gillichthys mirabilis* 145:51
Donnelly P, Woolcock AJ (1977) Ventilation and Gas Exchange in the Carpet Python, *Morelia spilotes variegata* 122:403
Dooling RJ, Searcy MH (1981) Amplitude Modulation Thresholds for the Parakeet (*Melopsittacus undulatus*) 143:383
Dorresteijn A, see Bretschneider F, et al
Dorsett DA, see Clark JV
Douguet D, see Bouverot P, et al
Dreisig H (1981) The Dynamics of Pigment

Migration in Insect Superposition Eyes 143:491
Dreissmann G, see Schöne H, et al
Driedzic WR, McGuire G, Hatheway M (1981) Metabolic Alterations Associated with Increased Energy Demand in Fish White Muscle 141:425
Driedzic WR, Stewart JM (1982) Myoglobin Content and the Activities of Enzymes of Energy Metabolism in Red and White Fish Hearts 149:67
Drongelen W van (1979) Contact Chemoreception of Host Plant Specific Chemicals in Larvae of Various *Yponomeuta* Species (Lepidoptera) 134:265
Dronse R, see Römer H, et al
Dubs A (1981) Non-Linearity and Light Adaptation in the Fly Photoreceptor 144:53
Dubs A (1982) The Spatial Integration of Signals in the Retina and Lamina of the Fly Compound Eye Under Different Conditions of Luminance 146:321
Duckrow RB, see Chapman KM, et al
Ducreux C, Gola M (1979) Discrete Axonal Electrogenic Area During Paroxysmal Depolarization in an *Aplysia* Neuron 134:29
Ducreux C, see Gola M
Dudai Y (1979) Behavioral Plasticity in a *Drosophila* Mutant, *dunce*^{DB276} 130:271
Dudel J, see Bauer U, et al
Duelli P (1978) Movement Detection in the Posterolateral Eyes of Jumping Spiders (*Evarcha arcuata*, Salticidae) 124:15
Duivenboden YA van (1982) Non-Ocular Photoreceptors and Photo-Orientation in the Pond Snail *Lymnaea stagnalis* (L.) 149:363
Duman JG (1979) Subzero Temperature Tolerance in Spiders: The Role of Thermal-Hysteresis-Factors 131:347
Duman JG (1980) Factors Involved in Overwintering Survival of the Freeze Tolerant Beetle, *Dendroides canadensis* 136:53
Duman JG, see Patterson JL, et al
Dumpert K, Gnatzy W (1977) Cricket Combined Mechanoreceptors and Kicking Response 122:9
Duncker H-R, see Perry SF
Dunlap J, see Rensing L, et al
Dunlap JC, Taylor W, Hastings JW (1980) The Effects of Protein Synthesis Inhibitors on the *Gonyaulax* Clock. I. Phase-Shifting Effects of Cycloheximide 138:1
Dunlap JC, see Krasnow R, et al
Dunlap JC, see Taylor W, et al
Dunning DM, see Kutchai H, et al
Dunson WA, see Taplin LE, et al
Dusenbery DB (1980) Responses of the Nematode *Caenorhabditis elegans* to Controlled Chemical Stimulation 136:327
Dusenbery DB (1980) Appetitive Response of the Nematode *Caenorhabditis elegans* to Oxygen 136:333
Dusenbery DB (1980) Chemotactic Behavior of Mutants of the Nematode *Caenorhabditis elegans* That Are Defective in Osmotic Avoidance 137:93
Dusenbery DB, Barr J (1980) Thermal Limits and Chemotaxis in Mutants of the Nematode *Caenorhabditis elegans* Defective in Thermotaxis 137:353
Dvorak DR, see Srinivasan MV
Dye J, see Heiligenberg W

E

Earnest DJ, Turek FW (1982) Splitting of the Circadian Rhythm of Activity in Hamsters: Effects of Exposure to Constant Darkness and Subsequent Re-Exposure to Constant Light 145:405
Eatock RA, Manley GA (1981) Auditory Nerve Fibre Activity in the Tokay Gecko. II. Temperature Effect on Tuning 142:219
Eatock RA, Manley GA, Pawson L (1981) Auditory Nerve Fibre Activity in the Tokay Gecko. I. Implications for Cochlear Processing 142:203
Eaton RC, Kimmel CB (1980) Directional Sensitivity of the Mauthner Cell System to Vibrational Stimulation in Zebrafish Larvae 140:337
Eaton RC, Lavender WA, Wieland CM (1981) Identification of Mauthner-Initiated Response Patterns in Goldfish: Evidence from Simultaneous Cinematography and Electrophysiology 144:521
Eaton RC, Lavender WA, Wieland CM (1982) Alternative Neural Pathways Initiate Fast-Start Responses Following Lesions of the Mauthner Neuron in Goldfish 145:485
Eaton RC, see Kimmel CB, et al
Ebberink RHM, Salimans M (1982) Control of Glycogen Phosphorylase Activity in the Posterior Adductor Muscle of the Sea Mussel *Mytilus edulis* 148:27
Ebberink RHM, Zwaan A de (1980) Control of Glycolysis in the Posterior Adductor Muscle of the Sea Mussel *Mytilus edulis* 137:165
Ebert R (1980) Influence of Juvenile Hormone on Gravity Orientation in the Female Honeybee Larva (*Apis mellifera* L.) 137:7
Ebihara S, Kawamura H (1981) The Role of the Pineal Organ and the Suprachiasmatic Nucleus in the Control of Circadian Locomotor Rhythms in the Java Sparrow, *Padda oryzivora* 141:207
Eckert H (1980) Functional Properties of the H1-Neurone in the Third Optic Ganglion of the Blowfly, *Phaenicia* 135:29
Eckert H (1981) The Horizontal Cells in the Lobula Plate of the Blowfly, *Phaenicia sericata* 143:511
Eckert H (1982) The Vertical-Horizontal Neurone (VH) in the Lobula Plate of the Blowfly, *Phaenicia* 149:195
Eckert H, Bishop LG (1978) Anatomical and Physiological Properties of the Vertical Cells in the Third Optic Ganglion of *Phaenicia sericata* (Diptera, Calliphoridae) 126:57
Eckert H, Hamdorf K (1980) Excitatory and Inhibitory Response Components in the Landing Response of the Blowfly, *Calliphora erythrocephala* 138:253
Eckert H, Hamdorf K (1981) The Contrast Frequency-Dependence: A Criterion for Judging the Non-Participation of Neurones in the Control of Behavioural Responses 145:241
Eclancher B, see Massabuau J-C, et al
Eddy FB, Bath RN (1979) Effects of Lanthanum on Sodium and Chloride Fluxes in the Goldfish *Carassius auratus* 129:145
Eddy FB, see Bath RN
Edrich W (1979) Honey Bees: Photoreceptors Participating in Orientation Behaviour to Light and Gravity 133:111
Edrich W, Neumeyer C, Helversen O von (1979) "Anti-Sun Orientation" of Bees with Regard to a Field of Ultraviolet Light 134:151
Edwards RM, Haines H (1978) Effects of Ambient Water Vapor Pressure and Temperature on Evaporative Water Loss in *Peromyscus maniculatus* and *Mus musculus* 128:177
Eguchi E, Waterman TH (1979) Longterm Dark Induced Fine Structural Changes in Crayfish Photoreceptor Membrane 131:191
Ehret G, Capranica RR (1980) Masking Patterns and Filter Characteristics of Auditory Nerve Fibers in the Green Treefrog (*Hyla cinerea*) 141:1
Ehret G, Frankenreiter M (1977) Quantitative Analysis of Cochlear Structures in the House Mouse in Relation to Mechanisms of Acoustical Information Processing 122:65
Ehret G, Gerhardt HC (1980) Auditory Masking and Effects of Noise on Responses of the Green Treefrog (*Hyla cinerea*) to Synthetic Mating Calls 141:13
Ehret G, Haack B (1982) Ultrasound Recognition in House Mice: Key-Stimulus Configuration and Recognition Mechanism 148:245
Ehret G, Moffat AJM, Tautz J (1982) Behavioral Determination of Frequency Resolution in the Ear of the Cricket, *Teleogryllus oceanicus* 148:237
Eichendorf A, see Kalmring K, et al
Elepfandt A (1982) Accuracy of Taxis Response to Water Waves in the Clawed Toad (*Xenopus laevis* Daudin) with Intact or with Lesioned Lateral Line System 148:535
Ellington WR (1981) Energy Metabolism During Hypoxia in the Isolated, Perfused Ventricle of the Whelk, *Busycon contrarium* Conrad 142:457
Ellington WR, Hammen CS (1977) Metabolic Compensation to Reduced Oxygen Tensions in the Sea Cucumber, *Sclerodactyla briareus* (Leseur) 122:347

Elliott EJ (1979) Cholinergic Response in the Heart of the Clam *Mercenaria mercenaria*: Activation by *Conus californicus* Venom Component 129:61
Ellis GB, Turek FW (1979) Changes in Locomotor Activity Associated with the Photoperiodic Response of the Testes in Male Golden Hamsters 132:277
Ellory JC, see Willis JS, et al
Elsner N, see Helversen O von
Elsner R, see Hong SK, et al
Emlen ST, see Wiltschko W, et al
Emmerich H, see Gellissen G
Emmerich H, see Klages G
Emmerton J, Delius JD (1980) Wavelength Discrimination in the 'Visible' and Ultraviolet Spectrum by Pigeons 141:47
Engelhardt W v, Ali KE, Wipper E (1979) Absorption and Secretion in the Tubiform Forestomach (Compartment 3) of the Llama 132:337
Engelhardt W v, see Hume ID, et al
Engelhardt W v, see Rübsamen K, et al
Engelmann W, Mack J (1978) Different Oscillators Control the Circadian Rhythm of Eclosion and Activity in *Drosophila* 127:229
Erber J (1982) Movement Learning of Free Flying Honeybees 146:273
Erber J, Menzel R (1977) Visual Interneurons in the Median Protocerebrum of the Bee 121:65
Erber J, Schildberger K (1980) Conditioning of an Antennal Reflex to Visual Stimuli in Bees (*Apis mellifera* L.) 135:217
Eriksson ES (1980) Responses of Visual Interneurons in the Fly Optic Lobe During Stimulation by Motion in Depth 141:123
Erl H, see Renwrantz L, et al
Erler G, Thurm U (1981) Dentritic Impulse Initiation in an Epithelial Sensory Neuron 142:237
Esch H (1978) On the Accuracy of the Distance Message in the Dances of Honey Bees 123:339
Esch H, Huber F, Wohlers DW (1980) Primary Auditory Neurons in Crickets: Physiology and Central Projections 137:27
Esher RJ, Wolfe JL (1979) The Effects of Temperature and Housing on Water Balance in a Burrowing Mouse, *Peromyscus polionotus* 133:241
Esslen J, see Burrows M, et al
Etienne AS (1978) Energy Versus Time Dependent Parameters in the Determination of a Behavioural Sequence in the *Aeschna* Larva 127:89
Evans DH, see Claiborne JB
Evans DH, see Farmer LL
Evans DH, see Oduleye SO
Evans DH, see Oduleye SO, et al
Eveloff J, Field M, Kinne R, Murer H (1980) Sodium Cotransport Systems in Intestine and Kidney of the Winter Flounder 135:175
Evêquoz V, Stadelmann A, Tsacopoulos M (1983) The Effect of Light on Glycogen Turnover in the Retina of the Intact Honeybee Drone (*Apis mellifera*) 150:69
Ewert J-P, Borchers H-W, Wietersheim A v (1978) Question of Prey Feature Detectors in the Toad's *Bufo bufo* (L.) Visual System: A Correlation Analysis 126:43
Ewert J-P, Borchers H-W, Wietersheim A v (1979) Directional Sensitivity, Invariance and Variability of Tectal T5 Neurons in Response to Moving Configurational Stimuli in the Toad *Bufo bufo* (L.) 132:191
Ewert J-P, Burghagen H, Albrecht L, Kepper J (1982) Effects of Background Structure on the Discrimination of Configurational Moving Prey Dummies by Toads *Bufo bufo* (L.) 147:179
Ewert J-P, Kehl W (1978) Configurational Prey-Selection by Individual Experience in the Toad *Bufo bufo* 126:105
Ewert J-P, Krug H, Schönitz G (1979) Activity of Retinal Class R3 Ganglion Cells in the Toad *Bufo bufo* (L.) in Response to Moving Configurational Stimuli: Influence of the Movement Direction 129:211
Ewert J-P, see Beck A
Ewert J-P, see Borchers H-W
Ewert J-P, see Borchers H-W, et al
Ewert J-P, see Schürg-Pfeiffer E
Ewert J-P, see Weerasuriya A
Ewert J-P, see Wietersheim A v
Ewing AW (1979) The Neuromuscular Basis of Courtship Song in *Drosophila*: The Role of the Direct and Axillary Wing Muscles 130:87

F

Fahy JL, see Behrens ME
Falcón J, Meissl H (1981) The Photosensory Function of the Pineal Organ of the Pike (*Esox lucius* L.). Correlation Between Structure and Function 144:127
Fallon AM, see Ziegler R, et al
Fänge R, Holmgren S (1982) Choline Acetyltransferase Activity in the Fish Swimbladder 146:57
Farley RD, see Brownell P
Farmer LL, Evans DH (1981) Chloride Extrusion in the Isolated Perfused Teleost Gill 141:471
Farrell AP, Daxboeck C, Randall DJ (1979) The Effect of Input Pressure and Flow on the Pattern and Resistance to Flow in the Isolated Perfused Gill of a Teleost Fish 133:233
Fattu JM, Suthers RA (1981) Subglottic Pressure and the Control of Phonation by the Echolocating Bat, *Eptesicus* 143:465
Fattu JM, see Suthers RA
Faulkner JA, see Carey C, et al
Fay RR (1982) Neural Mechanisms of an Auditory Temporal Discrimination by the Goldfish 147:201
Fay RR, see Hillery CM
Fedde MR, see Kiley JP, et al
Fedde MR, see Kuhlmann WD
Feder ME, Olsen LE (1978) Behavioral and Physiological Correlates of Recovery from Exhaustion in the Lungless Salamander *Batrachoseps attenuatus* (Amphibia: Plethodontidae) 128:101
Feiler R, see Kirschfeld K, et al
Feinstein R, Pinsker H, Schmale M, Gooden BA (1977) Bradycardial Response in *Aplysia* Exposed to Air 122:311
Feist DD, see Koban M
Felbeck H (1980) Investigations on the Role of the Amino Acids in Anaerobic Metabolism of the Lugworm *Arenicola marina* L. 137:183
Feng AS (1981) Directional Response Characteristics of Single Neurons in the Torus Semicircularis of the Leopard Frog (*Rana pipiens*) 144:419
Feng AS, see Fuzessery ZM
Fenton MB, Fullard JH (1979) The Influence of Moth Hearing on Bat Echolocation Strategies 132:77
Fiaschi V, see Ioalè P, et al
Fiaschi V, see Papi F, et al
Field LH, Hill KG, Ball EE (1980) Physiological and Biophysical Properties of the Auditory System of the New Zealand Weta *Hemideina crassidens* (Blanchard, 1851) (Ensifera: Stenopelmatidae) 141:31
Field M, see Eveloff J, et al
Finch CA, see Huebers HA, et al
Finch CA, see Lee MY, et al
Findlay I (1978) The Role of the Cuticular Stress Detector, CSD_1, in Locomotion and Limb Autotomy in the Crab *Carcinus maenas* 125:79
Finell N, see Järvilehto M
Finlayson LH, Orchard I (1977) The Ionic Regulation of Action Potentials in the Axon of a Stretch Receptor Neuron of the Stick Insect (*Carausius morosus*) 122:45
Fischbach KF (1979) Simultaneous and Successive Colour Contrast Expressed in "Slow" Phototactic Behaviour of Walking *Drosophila melanogaster* 130:161
Fisher FM, see Starling JA
Fisher S, see Merrill DP, et al
Fitch GK, Kammer AE (1982) Modulation of the Ventilatory Rhythm of the Hellgrammite *Corydalus cornutus* by Mechanosensory Input 149:423
Fitzgerald K, Zucker I, Rusak B (1978) An Evaluation of Homeostasis of Circadian Periodicity in the Golden Hamster 123:265
Fleischer AG (1981) The Effect of Eyestalk Hormones on the Gastric Mill in the Intact Lobster, *Panulirus interruptus* 141:363
Fleissner G (1982) Isolation of an Insect Circadian Clock 149:311
Fleissner G, see Schliwa M
Fletcher CR (1978) Osmotic and Ionic Regulation in the Cod (*Gadus callarias* L.). I. Water Balance 124:149
Fletcher CR (1978) Osmotic and Ionic Reg-

ulation in the Cod (*Gadus callarias* L.). II. Salt Balance 124:157
Fletcher NH (1978) Acoustical Response of Hair Receptors in Insects 127:185
Fletcher NH, see Masters WM, et al
Florentz A, see Leray C, et al
Foà A, see Papi F, et al
Foà A, see Wallraff HG, et al
Folk GE Jr, see Grubb B
Follet BK, see Simpson SM
Forward RB Jr (1980) Phototaxis of a Sand-Beach-Amphipod: Physiology and Tidal Rhythms 135:243
Forward RB Jr, Cronin TW (1979) Spectral Sensitivity of Larvae from Intertidal Crustaceans 133:311
Foskett JK, Hubbard GM, Machen TE, Bern HA (1982) Effects of Epinephrine, Glucagon and Vasoactive Intestinal Polypeptide on Chloride Secretion by Teleost Opercular Membrane 146:27
Foster RG, Roberts A (1982) The Pineal Eye in *Xenopus laevis* Embryos and Larvae: A Photoreceptor with a Direct Excitatory Effect on Behaviour 145:413
Franceschini N, see Hardie RC, et al
Franceschini N, see Kirschfeld K, et al
Frankenreiter M, see Ehret G
Frantsevich L, Govardovski V, Gribakin F, Nikolajev G, Pichka V, Polanovsky A, Shevchenko V, Zolotov V (1977) Astro-orientation in *Lethrus* (Coleoptera, Scarabaeidae) 121:253
Frantsevich LI, Mokrushov PA (1980) Turning and Righting in *Geotrupes* (Coleoptera, Scarabaeidae) 136:279
Frazer BM, see Keyser KT, et al
Freel RW (1982) Heterogeneity and Dynamics of Muscle Fiber Water in Marine Crustaceans 146:113
French AR (1982) Intraspecific Differences in the Pattern of Hibernation in the Ground Squirrel *Spermophilus beldingi* 148:83
French AS, Järvilehto M (1978) The Transmission of Information by First and Second Order Neurons in the Fly Visual System 126:87
French AS, Kuster JE (1982) The Effects of Temperature on Mechanotransduction in the Cockroach Tactile Spine 147:251
French AS, see Kuster JE
Fricke RA, Block GD, Kennedy D (1982) Inhibition of Mechanosensory Neurons in the Crayfish. II. Inhibition Associated with Proprioceptive Feedback from Locomotion 149:251
Friesen WO, see Young SR, et al
Frisch Karl von (1982) November 20, 1886–June 12, 1982 147:415
Frishkopf LS, see Peterson SK, et al
Frixione E, Aréchiga H (1981) Ionic Dependence of Screening Pigment Migrations in Crayfish Retinal Photoreceptors 144:35
Frixione E, see Tsutsumi V, et al
Frye BE, see Brown PS, et al
Fryer G, see Potts WTW
Fullard JH (1979) Behavioral Analyses of Auditory Sensitivitiy in *Cycnia tenera* Hübner (Lepidoptera: Arctiidae) 129:79
Fullard JH, Thomas DW (1981) Detection of Certain African, Insectivorous Bats by Sympatric, Tympanate Moths 143:363
Fullard JH, see Fenton MB
Fuller CA, see Sulzman FM, et al
Furusawa T, Shikata M, Yamashita O (1982) Temperature Dependent Sorbitol Utilization in Diapause Eggs of the Silkworm, *Bombyx mori* 147:21
Fuzessery ZM, Feng AS (1981) Frequency Representation in the Dorsal Medullary Nucleus of the Leopard Frog, *Rana p. pipiens* 143:339
Fuzessery ZM, Feng AS (1982) Frequency Selectivity in the Anuran Auditory Midbrain: Single Unit Responses to Single and Multiple Tone Stimulation 146:471
Fuzessery ZM, Feng AS (1983) Frequency Selectivity in the Anuran Medulla: Excitatory and Inhibitory Tuning Properties of Single Neurons in the Dorsal Medullary and Superior Olivary Nuclei 150:107
Fuzessery ZM, Feng AS (1983) Mating Call Selectivity in the Thalamus and Midbrain of the Leopard Frog (*Rana p. pipiens*): Single and Multiunit Analyses 150:333
Fuzessery ZM, see Ache BW

G

Gabbott PA, see Gäde G, et al
Gäde G (1980) The Energy Metabolism of the Foot Muscle of the Jumping Cockle, *Cardium tuberculatum*: Sustained Anoxia Versus Muscular Activity 137:177
Gäde G, Weeda E, Gabbott PA (1978) Changes in the Level of Octopine during the Escape Responses of the Scallop, *Pecten maximus* (L.) 124:121
Gademann R, see Wolf R, et al
Gaertner FH, see Shetty AS, et al
Garlick WS, see Hazel JR, et al
Gebhardt B, see Wolf R, et al
Geethabali, see Barth FG
Gellissen G, Emmerich H (1980) Purification and Properties of a Diglyceride-Binding Lipoprotein (LP I) of the Hemolymph of Adult Male *Locusta migratoria* 136:1
Gelperin A, see Sahley C, et al
Gentle MJ (1979) Single Unit Responses from the Solitary Complex Following Oral Stimulation in the Chicken 130:259
Gercken J, see Renwrantz L, et al
Gerhardt HC (1981) Mating Call Recognition in the Green Treefrog (*Hyla cinerea*): Importance of Two Frequency Bands as a Function of Sound Pressure Level 144:9
Gerhardt HC (1981) Mating Call Recognition in the Barking Treefrog (*Hyla gratiosa*): Responses to Synthetic Calls and Comparisons with the Green Treefrog (*Hyla cinerea*) 144:17
Gerhardt HC, Mudry KM (1980) Temperature Effects on Frequency Preferences and Mating Call Frequencies in the Green Treefrog, *Hyla cinerea* (Anura: Hylidae) 137:1
Gerhardt HC, see Ehret G
Gerhardt HC, see Rheinlaender J, et al
Gerstberger R, see Kaul R, et al
Gerth WA, Hemmingsen EA (1982) Limits of Gas Secretion by the Salting-Out Effect in the Fish Swimbladder Rete 146:129
Gesser H, Andresen P, Brams P, Sund-Laursen J (1982) Inotropic Effects of Adrenaline on the Anoxic or Hypercapnic Myocardium of Rainbow Trout and Eel 147:123
Gesser H, Poupa O (1978) The Role of Intracellular Ca^{2+} Under Hypercapnic Acidosis of Cardiac Muscle: Comparative Aspects 127:307
Gesser H, Poupa O (1979) Effects of Different Types of Acidosis and Ca^{2+} on Cardiac Contractility in the Flounder (*Pleuronectes flesus*) 131:293
Gesser H, Poupa O (1981) Acidosis and Ca^{2+} Distribution in Myocardial Tissue of Flounder and Rat 143:245
Getting PA (1977) Neuronal Organization of Escape Swimming in *Tritonia* 121:325
Gewecke M, Heinzel H-G (1980) Aerodynamic and Mechanical Properties of the Antennae as Air-Current Sense Organs in *Locusta migratoria*. I. Static Characteristics 139:357
Gewecke M, Niehaus M (1981) Flight and Flight Control by the Antennae in the Small Tortoiseshell (*Aglais urticae* L., Lepidoptera). I. Flight Balance Experiments 145:249
Gewecke M, see Baker PS, et al
Gewecke M, see Woike M
Ghidalia W, Vendrely R, Montmory C, Coirault Y, Brouard MO (1981) Coagulation in Decapod Crustacea. Comparative Study of the Clotting Process in Species from Groups A B and C 142:473
Gigliotti P, see Hong SK, et al
Gilles R, see Kévers C, et al
Gilles-Baillien M, Havaux JC, Chapelle S (1979) Seasonal Variation in Na^+ Transport and $(Na^+ - K^+)$-ATPase Activity in Tortoise Intestinal Epithelium 129:355
Gillette MU, see Gillette R, et al
Gillette R, Gillette MU, Davis WJ (1982) Substrates of Command Ability in a Buccal Neuron of *Pleurobranchaea*. I. Mechanisms of Action Potential Broadening 146:449
Gillette R, Gillette MU, Davis WJ (1982) Substrates of Command Ability in a Buccal Neuron of *Pleurobranchaea*. II. Potential Role of Cyclic AMP 146:461
Gillette R, see Davis WJ, et al
Glantz RM, Kirk MD (1980) Intercellular Dye Migration and Electrotonic Coupling Within Neuronal Networks of the Crayfish Brain 140:121

Glantz RM, see Kirk MD
Glantz RM, see Kirk MD, et al
Glas HW van der (1980) Orientation of Bees, *Apis mellifera*, to Unpolarized Colour Patterns, Simulating the Polarized Zenith Skylight Pattern 139:225
Glass JD, Lynch GR (1981) The Effect of Superficial Pinealectomy on Reproduction and Brown Fat in the Adult White-Footed Mouse, *Peromyscus leucopus* 144:145
Glass ML, Hicks JW, Riedesel ML (1979) Respiratory Responses to Long-Term Temperature Exposure in the Box Turtle, *Terrapene ornata* 131:353
Glass ML, Johansen K, Abe AS (1981) Pulmonary Diffusing Capacity in Reptiles (Relations to Temperature and O_2-Uptake) 142:509
Glass ML, see Burggren WW, et al
Glass ML, see Wood SC, et al
Gleeson M, see Brackenbury J, et al
Gleeson TT (1979) The Effects of Training and Captivity on the Metabolic Capacity of the Lizard *Sceloporus occidentalis* 129:123
Gleeson TT (1982) Lactate and Glycogen Metabolism During and After Exercise in the Lizard *Sceloporus occidentalis* 147:79
Gleeson TT, see Vleck D, et al
Gnatzy W, see Dumpert K
Gola M, Ducreux C (1979) Abnormal Axonal Discharges in R_2 Neurones of *Aplysia californica* 132:127
Gola M, Selverston A (1981) Ionic Requirements for Bursting Activity in Lobster Stomatogastric Neurons 145:191
Gola M, see Ducreux C
Goldman B, see Hall V
Goldman JR, see Kramer AP
Goldsmith KM, see Goldsmith TH
Goldsmith TH, Collins JS, Perlman DL (1981) A Wavelength Discrimination Function for the Hummingbird *Archilochus alexandri* 143:103
Goldsmith TH, Goldsmith KM (1979) Discrimination of Colors by the Black-Chinned Hummingbird, *Archilochus alexandri* 130:209
Goldsmith TH, see Cummins D
Goldsmith TH, see Kong K-L
Gooch V, see Krasnow R, et al
Gooch VD, see Sulzman FM, et al
Gooch VD, see Taylor W, et al
Gooden BA, see Feinstein R, et al
Goodman LJ, see Guy RG, et al
Goodman LJ, see Mobbs PG, et al
Gorbman A, see Urano A
Gordon H, see Winfree AT
Górecki A, see Weiner J
Görke K (1980) Influences of Spinal Cord Temperature Changes on Reflex Discharge and Spontaneous Activity of Spinal Motoneurones in Pigeons and Leguans 139:251
Görner P, see Reißland A
Götz KG, see Bülthoff H, et al
Govardovski V, see Frantsevich L, et al
Graf W, Meyer DL (1978) Eye Positions in Fishes Suggest Different Modes of Interaction Between Commands and Reflexes 128:241
Graf W, Meyer DL (1983) Central Mechanisms Counteract Visually Induced Tonus Asymmetries. A Study of Ocular Responses to Unilateral Illumination in Goldfish 150:473
Graf W, see Meyer DL, et al
Graft M van, see Kluytmans JH, et al
Graham D, Wendler G (1981) The Reflex Behaviour and Innervation of the Tergo-Coxal Retractor Muscles of the Stick Insect *Carausius morosus* 143:81
Graham JB, Kramer DL, Pineda E (1977) Respiration of the Air Breathing Fish *Piabucina festae* 122:295
Granzier HLM, Wiersma J, Akster HA, Osse JWM (1983) Contractile Properties of a White- and a Red-Fibre Type of the M. Hyohyoideus of the Carp (*Cyprinus carpio* L.) 149:441
Gratz RK (1978) Ventilation and Gas Exchange in the Diamondback Water Snake, *Natrix rhombifera* 127:299
Gratz RK (1979) Ventilatory Response of the Diamondback Water Snake, *Natrix rhombifera* to Hypoxia, Hypercapnia and Increased Oxygen Demand 129:105
Graves SY, see Dietz TH
Greaney GS, Somero GN (1980) Contributions of Binding and Catalytic Rate Constants to Evolutionary Modifications in K_m of NADH for Muscle-Type (M_4) Lactate Dehydrogenases 137:115
Greenaway P (1981) Sodium Regulation in the Freshwater/Land Crab *Holthuisana transversa* 142:451
Greenberg RM, see Stark WS, et al
Greenspan RJ (1980) Mutations of Choline Acetyltransferase and Associated Neural Defects in *Drosophila melanogaster* 137:83
Gregory P, see Mitchell BK
Greiner B, see Horn E, et al
Grenot C, see Lemire M, et al
Gribakin F, see Frantsevich L, et al
Gribakin FG (1981) Automatic Spectrosensitometry of Photoreceptors in *Lethrus* (Coleoptera, Scarabaeidae) 142:95
Gribakin FG, see Burovina IV, et al
Gribenski A, see Caston J
Grieshaber M (1978) Breakdown and Formation of High-Energy Phosphates and Octopine in the Adductor Muscle of the Scallop, *Chlamys opercularis* (L.), During Escape Swimming and Recovery 126:269
Grieshaber M, see Pörtner H-O, et al
Grigg GC (1981) Plasma Homeostasis and Cloacal Urine Composition in *Crocodylus porosus* Caught Along a Salinity Gradient 144:261
Grigg GC, Harlow P (1981) A Fetal-Maternal Shift of Blood Oxygen Affinity in an Australian Viviparous Lizard, *Sphenomorphus quoyii* (Reptilia, Scincidae) 142:495
Grigg GC, see Taplin LE, et al
Grinnell AD, see Brown PE, et al
Grobstein P, see Comer C
Groos GA, Mason R (1980) The Visual Properties of Rat and Cat Suprachiasmatic Neurones 135:349
Grossman ML, see Stein PSG
Grossman ML, see Stein PSG, et al
Grover GJ, see Merrill GF, et al
Grubb B, Folk GE Jr (1978) Skeletal Muscle $\dot{V}_{O_2}$ in Rat and Lemming: Effect of Blood Flow Rate 128:185
Gruber K, Wieser W (1983) Energetics of Development of the Alpine Charr, *Salvelinus alpinus*, in Relation to Temperature and Oxygen 149:485
Gruber SH, see Bushnell PG, et al
Grundel R, see Lynch GR, et al
Guppy M, Hochachka PW (1979) Pyruvate Kinase Functions in Hot and Cold Organs of Tuna 129:185
Gurvis R, see Arch S, et al
Gustafson Y, Schnitzler H-U (1979) Echolocation and Obstacle Avoidance in the Hiposiderid Bat *Asellia tridens* 131:161
Gutmann E, see Melichna J, et al
Gutmann E, see Vyskočil, F
Guy RG, Goodman LJ, Mobbs PG (1979) Visual Interneurons in the Bee Brain: Synaptic Organisation and Transmission by Graded Potentials 134:253
Guy RG, see Mobbs PG, et al
Gwinner E (1978) Effects of Pinealectomy on Circadian Locomotor Activity Rhythms in European Starlings, *Sturnus vulgaris* 126:123
Gwinner E, Benzinger I (1978) Synchronization of a Circadian Rhythm in Pinealectomized European Starlings by Daily Injection of Melatonin 127:209
Gwinner E, Dittami J (1980) Pinealectomy Affects the Circannual Testicular Rhythm in European Starlings (*Sturnus vulgaris*) 136:345
Gwinner E, Wiltschko W (1978) Endogenously Controlled Changes in Migratory Direction of the Garden Warbler, *Sylvia borin* 125:267
Gwinner E, Wozniak J (1982) Circannual Rhythms in European Starlings: Why Do They Stop Under Long Photoperiods? 146:419

H

Haack B, see Ehret G
Habersetzer J (1981) Adaptive Echolocation Sounds in the Bat *Rhinopoma hardwickei*. A Field Study 144:559
Hadley NF, see Toolson EC
Hafner GS, Tokarski T, Jones C, Martin R (1982) Rhabdom Degradation in White-Eyed and Wild-Type Crayfish After Long Term Dark Adaptation 148:419
Hagerman L, see Weber RE

Hagiwara G, see Reichert H, et al
Hagiwara G, see Sigvardt KA, et al
Hagiwara G, see Wine JJ
Haim A (1982) Effects of Long Scotophase and Cold Acclimation on Heat Production in Two Diurnal Rodents 148:77
Haim A, Borut A (1981) Heat Production and Dissipation in Golden Spiny Mice, *Acomys russatus* from Two Extreme Habitats 142:445
Haines H, see Edwards RM
Hall D, see Underwood H
Hall JC, see Schilcher F von
Hall V, Goldman B (1980) Effects of Gonadal Steroid Hormones on Hibernation in the Turkish Hamster (*Mesocricetus brandti*) 135:107
Hallonquist JD, see Mrosovsky N, et al
Halls JAT, see Silver SC
Hamann B, see Langer H, et al
Hamdorf K, Höglund G (1981) Light Induced Retinal Screening Pigment Migration Independent of Visual Cell Activity 143:305
Hamdorf G, Höglund G, Schlecht P (1978) Ion Gradient and Photoreceptor Sensitivity 125:237
Hamdorf K, see Eckert H
Hamdorf K, see Razmjoo S
Hamdorf K, see Schlecht P, et al
Hamilton KA, Ache BW (1983) Olfactory Excitation of Interneurons in the Brain of the Spiny Lobster 150:129
Hammel HT, Simon-Oppermann C, Simon E (1983) Tonicity of Carotid Blood Influences Salt Gland Secretion in Pekin Duck 149:451
Hammel HT, see Deutsch H, et al
Hammen CS, see Ellington WR
Hammock BD, see Jones D, et al
Hanai K (1981) A New Quantitative Analysis of the Feeding Response in *Hydra japonica*: Stimulatory Effects of Amino Acids in Addition to Reduced Glutathione 144:503
Hanai K, see Kitajima M
Hansen K (1983) Reception of Bark Beetle Pheromone in the Predaceous Clerid Beetle, *Thanasimus formicarius* (Coleoptera: Cleridae) 150:371
Hanson FE, see Buck J, et al
Haraguchi Y, see Koizumi O, et al
Harcombe ES, Wyman RJ (1978) The Cyclically Repetitive Firing Sequences of Identified *Drosophila* Flight Motoneurons 123:271
Hardie RC (1979) Electrophysiological Analysis of Fly Retina. I: Comparative Properties of R1–6 and R7 and 8 129:19
Hardie RC, Franceschini N, McIntyre PD (1979) Electrophysiological Analysis of Fly Retina. II. Spectral and Polarisation Sensitivity in R7 and R8 133:23
Hardie RC, Franceschini N, McIntyre PD (1979) Erratum 134:285
Hardie RC, Franceschini N, Ribi W, Kirschfeld K (1981) Distribution and Properties of Sex-Specific Photoreceptors in the Fly *Musca domestica* 145:139
Hardie RC, see Blest AD, et al
Hardie RC, see Laughlin SB
Harlow HJ, see Phillips JA
Harlow P, see Grigg GC
Harlow P, see Taplin LE, et al
Harm H, see Renwrantz L, et al
Harrison JB, see Brown PE, et al
Hartline PH, Hurley AC, Lange GD (1979) Eye Stabilization by Statocyst Mediated Oculomotor Reflex in *Nautilus* 132:117
Hartline PH, see Lange GD, et al
Hartman HB, see Walthall WW
Hartman MT, see Seymour RS, et al
Hartwig HG, Veen T van (1979) Spectral Characteristics of Visible Radiation Penetrating into the Brain and Stimulating Extraretinal Photoreceptors. Transmission Recordings in Vertebrates 130:277
Hassall CD, see McMahon B, et al
Hast M, see Jürgens U, et al
Hastings JW, see Dunlap JC, et al
Hastings JW, see Krasnow R, et al
Hastings JW, see Rensing L, et al
Hastings JW, see Sulzman FM, et al
Hastings JW, see Taylor W
Hastings JW, see Taylor W, et al
Hatheway M, see Driedzic WR, et al
Hatt H, Bauer U (1982) Electrophysiological Properties of Pyridine Receptors in the Crayfish Walking Leg 148:221
Hatt H, see Bauer U, et al
Hausen K, see Hengstenberg R, et al
Havaux JC, see Gilles-Baillien M, et al
Havličková L, see Melichna J, et al
Hawkins AD, Sand O (1977) Directional Hearing in the Median Vertical Plane by the Cod 122:1
Hawkins AD, see Buwalda RJA, et al
Hayashi S, Ooshiro Z (1979) Gluconeogenesis in Isolated Liver Cells of the Eel, *Anguilla japonica* 132:343
Haydon PG, Winlow W (1982) Multipolar Neurones of *Lymnaea stagnalis*. I. Multiple Spike Initiation Sites and Propagation Failure Allow Neuronal Compartmentalization 147:503
Haynes LW, see Sillman AJ, et al
Hazel JR, Garlick WS, Sellner PA (1978) The Effects of Assay Temperature upon the pH Optima of Enzymes from Poikilotherms: A Test of the Imidazole Alphastat Hypothesis 123:97
Hazel JR, Neas NP (1982) Turnover of the Fatty Acyl and Glycerol Moieties of Microsomal Membrane Lipids from Liver, Gill and Muscle Tissue of Thermally Acclimated Rainbow Trout, *Salmo gairdneri* 149:11
Hazel JR, Prosser CL (1979) Incorporation of l-^{14}C-Acetate into Fatty Acids and Sterols by Isolated Hepatocytes of Thermally Acclimated Rainbow Trout (*Salmo gairdneri*) 134:321
Hector DH, see Suthers RA
Hegmann JP, see Possidente B
Heide G (1979) Proprioceptive Feedback Dominates the Central Oscillator in the Patterning of the Flight Motoneuron Output in *Tipula* (Diptera) 134:177
Heiligenberg W (1980) The Evaluation of Electroreceptive Feedback in a Gymnotoid Fish with Pulse-Type Electric Organ Discharges 138:173
Heiligenberg W, Baker C, Bastian J (1978) The Jamming Avoidance Response in Gymnotoid Pulse-Species: A Mechanism to Minimize the Probability of Pulse-Train Coincidence 124:211
Heiligenberg W, Baker C, Matsubara J (1978) The Jamming Avoidance Response in *Eigenmannia* Revisited: The Structure of a Neuronal Democracy 127:267
Heiligenberg W, Bastian J (1980) The Control of *Eigenmannia*'s Pacemaker by Distributed Evaluation of Electroreceptive Afferences 136:113
Heiligenberg W, Dye J (1982) Labelling of Electroreceptive Afferents in a Gymnotoid Fish by Intracellular Injection of HRP: The Mystery of Multiple Maps 148:287
Heiligenberg W, Partridge BL (1981) How Electroreceptors Encode JAR-Eliciting Stimulus Regimes: Reading Trajectories in a Phase-Amplitude Plane 142:295
Heiligenberg W, see Bastian J
Heiligenberg W, see Matsubara J
Heiligenberg W, see Partridge BL
Heiligenberg W, see Partridge BL, et al
Heinrich B, see Waddington KD
Heinzel H-G, see Gewecke M
Heinzel H-G, see Horsmann U, et al
Heinzeller T, Vogel H (1978) Daily Release of Neurosecretory Material Produced in the Pars Intercerebralis of *Apis mellifica* L. with and without Training to a Foraging Schedule 126:327
Heisenberg M, Wolf R (1979) On the Fine Structure of Yaw Torque in Visual Flight Orientation of *Drosophila melanogaster* 130:113
Heisenberg M, Wonneberger R, Wolf R (1978) optomotorblind^{H31} – a *Drosophila* Mutant of the Lobula Plate Giant Neurons 124:287
Heisenberg M, see Blondeau J
Heisenberg M, see Borst A
Heisenberg M, see Wolf R
Heisenberg M, see Wolf R, et al
Heldmaier G, Steinlechner S (1981) Seasonal Control of Energy Requirements for Thermoregulation in the Djungarian Hamster (*Phodopus sungorus*), Living in Natural Photoperiod 142:429
Heldmaier G, Steinlechner S, Rafael J (1982) Nonshivering Thermogenesis and Cold Resistance During Seasonal Acclimatization in the Djungarian Hamster 149:1
Helle KB, see Ask JA, et al
Helle KB, see Stene-Larsen G
Heller HC, see Chappell MA, et al
Heller HC, see Kronenberg F
Heller R, see Rübsamen K, et al
Hellweg FC (1978) Responses of Cells in the Somatosensory Cortex of Unanaesthetized

Cats after Sinusoidal Displacements of Single Vibrissae 125:29
Helversen O von, Elsner N (1977) The Stridulatory Movements of Acridid Grasshoppers Recorded with an Opto-electronic Device 122:53
Helversen O von, see Edrich W, et al
Hemmingsen EA, see Gerth WA
Hengstenberg B, see Hengstenberg R, et al
Hengstenberg R (1982) Common Visual Response Properties of Giant Vertical Cells in the Lobula Plate of the Blowfly *Calliphora* 149:179
Hengstenberg R, Hausen K, Hengstenberg B (1982) The Number and Structure of Giant Vertical Cells (VS) in the Lobula Plate of the Blowfly *Calliphora erythrocephala* 149:163
Henson OW Jr, see Pollak G, et al
Hepburn HR, see Andersen SO, et al
Hepburn HR, see Thompson PR
Herbrychová A, see Melichna J, et al
Hermann A (1979) Generation of a Fixed Motor Pattern. I. Details of Synaptic Interconnections of Pyloric Neurons in the Stomatogastric Ganglion of the Crab, *Cancer pagurus* 130:221
Hermann A (1979) Generation of a Fixed Motor Pattern. II. Electrical Properties and Synaptic Characteristics of Pyloric Neurons in the Stomatogastric Ganglion of the Crab, *Cancer pagurus* 130:229
Hernández de Salomon C, Spatz H-C (1983) Colour Vision in *Drosophila melanogaster*: Wavelength Discrimination 150:31
Hernandez T, see Binkley S, et al
Herre M, see Bülthoff H, et al
Herrera AA (1979) Electrophysiology of Bioluminescent Excitable Epithelial Cells in a Polynoid Polychaete Worm 129:67
Hertel H (1980) Chromatic Properties of Identified Interneurons in the Optic Lobes of the Bee 137:215
Hertel H (1982) The Effect of Spectral Light Deprivation on the Spectral Sensitivity of the Honey Bee 147:365
Hicks JW, Riedesel ML (1983) Diurnal Ventilatory Patterns in the Garter Snake, *Thamnophis elegans* 149:503
Hicks JW, see Glass ML, et al
Hildebrand E (1978) Ciliary Reversal in *Paramecium*: Temperature Dependence of K^+-Induced Excitability Decrease and of Recovery 127:39
Hill KG (1980) Physiological Characteristics of Auditory Receptors in *Hemideina crassidens* (Blanchard) (Ensifera: Stenopelmatidae) 141:39
Hill KG, Boyan GS (1977) Sensitivity to Frequency and Direction of Sound in the Auditory System of Crickets (Gryllidae) 121:79
Hill KG, Oldfield BP (1981) Auditory Function in Tettigoniidae (Orthoptera: Ensifera) 142:169
Hill KG, see Ball EE
Hill KG, see Field LH, et al
Hill MW, Hoyland J, Bangham AD (1980) Effects of Temperature and n-Butanol (a Model Anaesthetic) on a Behavioural Function of Goldfish 135:327
Hill MW, Neale E, Bangham AD (1981) Acute Tolerance to the Effects of n-Butanol and n-Hexanol in Goldfish. A Behavioural Study 142:61
Hill MW, see Hoyland J, et al
Hillery CM, Fay RR (1982) Forward Masking and Suppression in the Midbrain of the Southern Grey Treefrog (*Hyla chrysoscelis*) 146:435
Hillman SS (1978) The Roles of Oxygen Delivery and Electrolyte Levels in the Dehydrational Death of *Xenopus laevis* 128:169
Hillman SS, Shoemaker VH, Putnam R, Withers PC (1979) Reassessment of Aerobic Metabolism in Amphibians During Activity 129:309
Himstedt W, Roth G (1980) Neuronal Responses in the Tectum Opticum of *Salamandra* to Visual Prey Stimuli 135:251
Himstedt W, Tempel P, Weiler J (1978) Responses of Salamanders to Stationary Visual Patterns 124:49
Himstedt W, see Manteuffel G
Hirakawa Y, Kijima H (1980) Behavioral Analysis of Glutathione Receptor of *Hydra*. I. Mouth-Opening Threshold, Inhibition Constant and Their Temperature Dependence 137:73
Hisada M, see Ozeki M, et al
Hisada M, see Takahata M
Hisada M, see Yoshino M, et al
Hissa R, see Hohtola E, et al
Hochachka PW, see Guppy M
Hochachka PW, see Suarez RK
Hocking WE, see Barnett SA, et al
Hofer A, see Markl J, et al
Hoffmann EK, see Rasmussen L, et al
Hoffmann K (1982) The Effect of Brief Light Pulses on the Photoperiodic Reaction in the Djungarian Hamster *Phodopus sungorus* 148:529
Hoffmann KH (1981) Phosphagens and Phosphokinases in *Tubifex* sp. 143:237
Hoffmann KH, Mustafa T, Jørgensen JB (1979) Role of Pyruvate Kinase, Phosphoenolpyruvate Carboxykinase, Malic Enzyme and Lactate Dehydrogenase in Anaerobic Energy Metabolism of *Tubifex* spec. 130:337
Hoffmann KH, see Mustafa T, et al
Hoffmann K-P, see Katte O
Höglund G, see Hamdorf K
Höglund G, see Hamdorf K, et al
Hohtola E, Rintamäki H, Hissa R (1980) Shivering and Ptiloerection as Complementary Cold Defense Responses in the Pigeon During Sleep and Wakefulness 136:77
Holde KE Van, see Miller KI
Holloway JA, see Lall AB, et al
Holmgren S, see Fänge R
Holm-Jensen I, see Jensen TF
Homma S (1981) Effects of DL-α-Aminoadipate on Synaptic Transmission in Spinal Interneurons of the Lamprey 143:423
Honegger H-W (1978) Sustained and Transient Responding Units in the Medulla of the Cricket *Gryllus campestris* 125:259
Honegger H-W (1980) Receptive Fields of Sustained Medulla Neurons in Crickets 136:191
Honegger H-W (1981) A Preliminary Note on a New Optomotor Response in Crickets: Antennal Tracking of Moving Targets 142:419
Honegger H-W, Reif H, Müller W (1979) Sensory Mechanisms of Eye Cleaning Behavior in the Cricket *Gryllus campestris* 129:247
Hong SK, Ashwell-Erickson S, Gigliotti P, Elsner R (1982) Effects of Anoxia and Low pH on Organic Ion Transport and Electrolyte Distribution in Harbor Seal (*Phoca vitulina*) Kidney Slices 149:19
Honrubia V, see Denia A, et al
Hori M, Riddiford LM (1982) Regulation of Ommochrome Biosynthesis in the Tobacco Hornworm, *Manduca sexta*, by Juvenile Hormone 147:1
Horn E, Bischof HJ (1983) Gravity Reception in Crickets: The Influence of Cercal and Antennal Afferences on the Head Position 150:93
Horn E, Greiner B, Horn I (1979) The Effect of ACTH on Habituation of the Turning Reaction in the Toad *Bufo bufo* L. 131:129
Horn E, Lang H-G (1978) Positional Head Reflexes and the Role of the Prosternal Organ in the Walking Fly, *Calliphora erythrocephala* 126:137
Horn I, see Horn E, et al
Horridge GA, Marčelja L, Jahnke R, Matić T (1983) Single Electrode Studies on the Retina of the Butterfly *Papilio* 150:271
Horsmann U, Heinzel H-G, Wendler G (1983) The Phasic Influence of Self-Generated Air Current Modulations on the Locust Flight Motor 150:427
Hoshimiya N, Shogen K, Matsuo T, Chichibu S (1980) The *Apteronotus* EOD Field: Waveform and EOD Field Simulation 135:283
Houlihan DF, Innes AJ (1982) Oxygen Consumption, Crawling Speeds, and Cost of Transport in Four Mediterranean Intertidal Gastropods 147:113
Houlihan DF, Innes AJ, Wells MJ, Wells J (1982) Oxygen Consumption and Blood Gases of *Octopus vulgaris* in Hypoxic Conditions 148:35
House EW, see Schmidt SP
Houten J Van (1978) Two Mechanisms of Chemotaxis in *Paramecium* 127:167
Howard J (1981) Temporal Resolving Power of the Photoreceptors of *Locusta migratoria* 144:61
Hoy R, see Pollack GS
Hoy RR, see Casaday GB
Hoyland J, Cossins AR, Hill MW (1979) Thermal Limits for Behavioural Function and Resistance-Adaptation of Goldfish, *Carassius auratus* L. 129:241
Hoyland J, see Hill MW, et al
Hryshchyshyn M, see Binkley S, et al

Hu KG, Reichert H, Stark WS (1978) Electrophysiological Characterization of *Drosophila* Ocelli 126:15
Hu KG, Stark WS (1977) Specific Receptor Input into Spectral Preference in *Drosophila* 121:241
Hu KG, Stark WS (1980) The Roles of *Drosophila* Ocelli and Compound Eyes in Phototaxis 135:85
Hubbard GM, see Foskett JK, et al
Huber F, see Esch H, et al
Huber F, see Thorson J, et al
Huber F, see Weber T, et al
Huber F, see Wohlers DW
Hubl L, Schneider H (1979) Temperature and Auditory Thresholds: Bioacoustic Studies of the Frogs *Rana r. ridibunda, Hyla a. arborea* and *Hyla a. savignyi* (Anura, Amphibia) 130:17
Huddart H, Saad KHM (1978) The Effect of Sodium and Magnesium and Their Interaction with Quinine and Lanthanum on Spontaneous Activity and Related Calcium Movements of Rat Ileal Smooth Muscle 126:233
Hudson DM, see Bernstein MH, et al
Hudson MJ, see Wells RMG, et al
Huebers E, see Huebers HA, et al
Huebers H, see Lee MY, et al
Huebers HA, Huebers E, Finch CA, Martin AW (1982) Characterization of an Invertebrate Transferrin from the Crab *Cancer magister* (Arthropoda) 148:101
Hughes GM, see Vergara GA
Hulebak K, see Simmons JA, et al
Hume ID, Rübsamen K, Engelhardt W v (1980) Nitrogen Metabolism and Urea Kinetics in the Rock Hyrax (*Procavia habessinica*) 138:307
Hurley AC, see Hartline PH, et al
Hurley AC, see Lange GD, et al
Hurley AK, see White RH, et al
Hustert R (1982) Proprioceptive Function of a Complex Chordotonal Organ Associated with the Mesothoracic Coxa in Locusts 147:389
Hustert R (1983) Proprioceptor Responses and Convergence of Proprioceptive Influence on Motoneurones in the Mesothoracic Thoraco-Coxal Joint of Locusts 150:77
Hutchings M, Lewis B (1981) Response Properties of Primary Auditory Fibers in the Cricket *Teleogryllus oceanicus* (Le Guillou) 143:129
Hutchison LV, see Macadar AW, et al
Hutchison VH, see Preslar AJ III

I

Ichikawa T (1980) Antidiuretic Activity of Teleost Urophysial Extracts in the Rat 135:183
Ichikawa T, Tateda H (1980) Cellular Patterns and Spectral Sensitivity of Larval Ocelli in the Swallowtail Butterfly *Papilio* 139:41
Ichikawa T, Tateda H (1982) Distribution of Color Receptors in the Larval Eyes of Four Species of Lepidoptera 149:317
Ichikawa T, Tateda H (1982) Receptive Field of the Stemmata in the Swallowtail Butterfly *Papilio* 146:191
Ikeda K, see Koenig JH
Illnerová H, Vaněček J (1982) Two-Oscillator Structure of the Pacemaker Controlling the Circadian Rhythm of N-Acetyltransferase in the Rat Pineal Gland 145:539
Ilyinsky OB, see Brown HR
Ingermann RL, Terwilliger RC (1981) Oxygen Affinities of Maternal and Fetal Hemoglobins of the Viviparous Seaperch, *Embiotoca lateralis* 142:523
Ingermann RL, Terwilliger RC (1981) Intraerythrocytic Organic Phosphates of Fetal and Adult Seaperch (*Embiotoca lateralis*): Their Role in Maternal-Fetal Oxygen Transport 144:253
Innes AJ, see Houlihan DF
Innes AJ, see Houlihan DF, et al
Inouye ST, Kawamura H (1982) Characteristics of a Circadian Pacemaker in the Suprachiasmatic Nucleus 146:153
Ioalé P, Papi F, Fiaschi V, Baldaccini NE (1978) Pigeon Navigation: Effects upon Homing Behaviour by Reversing Wind Direction at the Loft 128:285
Ioalé P, see Wallraff HG, et al
Iriki M, see Nomoto S, et al
Irving SN, Miller TA (1980) Ionic Differences in 'Fast' and 'Slow' Neuromuscular Transmission in Body Wall Muscles of *Musca domestica* Larvae 135:291
Irving SN, Miller TA (1980) Aspartate and Glutamate as Possible Transmitters at the 'Slow' and 'Fast' Neuromuscular Junctions of the Body Wall Muscles of *Musca* Larvae 135:299
Isaia A, see Isaia J
Isaia J, Isaia A (1978) Measurements of Water Exchanges in the Eel Gill Compared by Nuclear Magnetic Resonance and Isotopic Techniques 124:137
Ishimatsu A, Itazawa Y (1983) Difference in Blood Oxygen Levels in the Outflow Vessels of the Heart of an Air-Breathing Fish, *Channa argus*: Do Separate Blood Streams Exist in a Teleostean Heart? 149:435
Isono K, see Tanimura T, et al
Itazawa Y, see Ishimatsu A
Ivanyshyn AM, see Stark WS, et al

J

Jacklet JW (1980) Light Sensitivity of the Rhinophores and Eyes of *Aplysia* 136:257
Jackson DC, Braun BA (1979) Respiratory Control in Bullfrogs: Cutaneous Versus Pulmonary Response to Selective CO_2 Exposure 129:339
Jackson DC, Prange HD (1979) Ventilation and Gas Exchange During Rest and Exercise in Adult Green Sea Turtles 134:315
Jackson DC, see Ultsch GR, et al
Jacobs GH, Blakeslee B, McCourt ME, Tootell RBH (1980) Visual Sensitivity of Ground Squirrels to Spatial and Temporal Luminance Variations 136:291
Jacobs JR, Atwood HL (1981) Effects of Thermal History on Long Term Neuromuscular Facilitation in Intact Crayfish and Isolated Claw Preparations 143:53
Jacobs JR, Atwood HL (1981) Long Term Facilitation of Tension in Crustacean Muscle and Its Modulation by Temperature, Activity and Circulating Amines 144:335
Jaffé K, see D'Alessio G, et al
Jahnke R, see Horridge GA, et al
Jakinovich W Jr, Sugarman D, Vlahopoulos V (1981) Gustatory Responses of the Cockroach, House Fly, and Gerbils to Methyl Glycosides 141:297
Janse C (1980) The Function of Statolith-Hair and Free-Hook-Hair Receptors in the Statocyst of the Crab, *Scylla serrata* 137:51
Janse C (1981) The Effect of Oxygen on Gravity Orientation in the Pulmonate Snail *Lymnaea stagnalis* 142:51
Janse C (1982) Sensory Systems Involved in Gravity Orientation in the Pulmonate Snail *Lymnaea stagnalis* 145:311
Janse C (1983) The Function of the Statocyst Sensory Cells in *Aplysia limacina* 150:359
Janse C, Sandeman DC (1979) The Rôle of the Fluid-Filled Balance Organs in the Induction of Phase and Gain in the Compensatory Eye Reflex of the Crab *Scylla serrata* 130:95
Janse C, Sandeman DC (1979) The Significance of Canal-Receptor Properties for the Induction of Phase and Gain in the Fluid-Filled Balance Organs of the Crab *Scylla serrata* 130:101
Janus J, see Kluytmans JH, et al
Järvilehto M, Finell N (1983) Development of the Function of Visual Receptor Cells During the Pupal Life of the Fly *Calliphora* 150:529
Järvilehto M, see French AS
Järvilehto M, see Moring J
Järvilehto M, see Moring J, et al
Jebram D, see Wiese K, et al
Jen PH-S (1978) Electrophysiological Properties of Auditory Neurons in the Superior Olivary Complex of Echolocating Bats 128:47
Jen PH-S, Kamada T (1982) Analysis of Orientation Signals Emitted by the CF-FM Bat, *Pteronotus p. parnellii* and the FM Bat, *Eptesicus fuscus* During Avoidance of Moving and Stationary Obstacles 148:389
Jen PH-S, Ostwald J, Suga N (1978) Electrophysiological Properties of the Acoustic Middle Ear and Laryngeal Muscle Reflexes in the Awake Echolocating FM-Bats, *Myotis lucifugus* 124:61
Jen PH-S, Schlegel PA (1982) Auditory Physiological Properties of the Neurones in the Inferior Colliculus of the Big Brown Bat, *Eptesicus fuscus* 147:351

Jen PH-S, Suthers RA (1982) Responses of Inferior Collicular Neurones to Acoustic Stimuli in Certain FM and CF-FM Paleotropical Bats 146:423
Jensen TF, Holm-Jensen I (1980) Energetic Cost of Running in Workers of Three Ant Species, *Formica fusca* L., *Formica rufa* L., and *Camponotus herculeanus* L. (Hymenoptera, Formicidae) 137:151
Johansen K, Lykkeboe G (1979) Thermal Acclimation of Aerobic Metabolism and O_2-Hb Binding in the Snake, *Vipera berus* 130:293
Johansen K, Lykkeboe G, Kornerup S, Maloiy GMO (1980) Temperature Insensitive O_2 Binding in Blood of the Tree Frog *Chiromantis petersi* 136:71
Johansen K, see Bech C, et al
Johansen K, see Brix O, et al
Johansen K, see Burggren WW, et al
Johansen K, see Burnett LE
Johansen K, see Glass ML, et al
Johansen K, see Wood SC, et al
Johnsen PB, Teeter JH (1980) Spatial Gradient Detection of Chemical Cues by Catfish 140:95
Johnson MA, see Stark WS
Johnson R, see Pollak G, et al
Johnson W, see Scheuch GC, et al
Johnston I, Lucking M (1978) Temperature Induced Variation in the Distribution of Different Types of Muscle Fibre in the Goldfish (*Carassius auratus*) 124:111
Johnston IA (1979) Calcium Regulatory Proteins and Temperature Acclimation of Actomyosin ATPase from a Eurythermal Teleost (*Carassius auratus* L.) 129:163
Johnston IA, Moon TW (1980) Endurance Exercise Training in the Fast and Slow Muscles of a Teleost Fish (*Pollachius virens*) 135:147
Johnston IA, Walesby NJ (1979) Evolutionary Temperature Adaptation and the Calcium Regulation of Fish Actomyosin ATPases 129:169
Johnston IA, see Altringham JD
Johnston IA, see McArdle HJ
Johnston IA, see Moon TW
Johnston IA, see Nicol CJM
Johnston IA, see Walesby NJ
Johnston JW, Jungreis AM (1979) Urea Production in *Rana pipiens*. Effects of Aldosterone on Urea Cycle Enzymes 134:359
Jones C, see Hafner GS, et al
Jones CS, Parker DS (1980) Mammary Blood Flow and Cardiac Output in the Conscious Lactating Rabbit 138:31
Jones D, Jones G, Wing KD, Rudnicka M, Hammock BD (1982) Juvenile Hormone Esterases of Lepidoptera. I. Activity in the Hemolymph During the Last Larval Instar of 11 Species 148:1
Jones G, see Jones D, et al
Jong D De (1982) Orientation of Comb Building by Honeybees 147:495
Jørgensen CB, see Rasmussen L, et al
Jørgensen JB, see Hoffmann KH, et al
Jørgensen JB, see Mustafa T, et al
Joy JE, Mrosovsky N (1983) Circannual Cycles in Golden-Mantled Ground Squirrels: Lengthening of Period by Low Temperatures in the Spring Phase 150:233
Joy JE, see Mrosovsky N, et al
Jüch PJW (1981) Mechanoreceptive Signals Processed by Mesencephalic Trigeminal Neurons in the Carp 141:157
Jüch PJW, see Ballintijn CM, et al
Jungreis AM, see Johnston JW
Jürgens U, Hast M, Pratt R (1978) Effects of Laryngeal Nerve Transection on Squirrel Monkey Calls 123:23

K

Kahn JA (1982) Patterns of Synaptic Inhibition in Motoneurons and Interneurons During Fictive Swimming in the Lamprey, as Revealed by Cl^- Injections 147:189
Kaiser W, Seidl R, Vollmar J (1977) The Participation of All Three Colour Receptors in the Phototactic Behaviour of Fixed Walking Honeybees 122:27
Kaiser W, see DeVoe RD, et al
Kaiser W, see Seidl R
Kalmring K, Kühne R (1980) The Coding of Airborne-Sound and Vibration Signals in Bimodal Ventral-Cord Neurons of the Grasshopper *Tettigonia cantans* 139:267
Kalmring K, Kühne R, Moysich F (1978) The Auditory Pathway in the Ventral Cord of the Migratory Locust (*Locusta migratoria*): Response Transmission in the Axons 126:25
Kalmring K, Kühne R, Moysich F (1978) The Coding of Sound Signals in the Ventral-Cord Auditory System of the Migratory Locust, *Locusta migratoria* 128:213
Kalmring K, Lewis B, Eichendorf A (1978) The Physiological Characteristics of the Primary Sensory Neurons of the Complex Tibial Organ of *Decticus verrucivorus* L. (Orthoptera, Tettigonioidae) 127:109
Kalmring K, Rehbein H, Kühne R (1979) An Auditory Giant Neuron in the Ventral Cord of *Decticus verrucivorus* (Tetigoniidae) 132:225
Kamada T, see Jen PH-S
Kamau JMZ, see Müller EF, et al
Kammer AE, Kinnamon SC (1979) Maturation of the Flight Motor Pattern Without Movement in *Manduca sexta* 130:29
Kammer AE, see Fitch GK
Kämper G, Dambach M (1981) Response of the Cercus-to-Giant Interneuron System in Crickets to Species-Specific Song 141:311
Kanwal JS, Caprio J (1983) An Electrophysiological Investigation of the Oro-Pharyngeal (IX–X) Taste System in the Channel Catfish, *Ictalurus punctatus* 150:345
Kass-Simon G, Passano LM (1978) A Neuropharmacological Analysis of the Pacemakers and Conducting Tissues of *Hydra attenuata* 128:71
Katte O, Hoffmann K-P (1980) Direction Specific Neurons in the Pretectum of the Frog (*Rana esculenta*) 140:53
Kauer JA, see Bekoff A
Kaul R, Gerstberger R, Meyer J-U, Simon E (1983) Salt Gland Blood Flow in Saltwater-Adapted Pekin Ducks: Microsphere Measurement of the Proportionality to Secretion Rate and Investigation of Controlling Mechanisms 149:457
Kavaliers M (1980) Circadian Locomotor Activity Rhythms of the Burbot, *Lota lota*: Seasonal Differences in Period Length and the Effect of Pinealectomy 136:215
Kavaliers M (1980) Extraretinal Mediation of Responses to Temperature and Light in Hatchling Alligators 136:243
Kavaliers M (1982) Seasonal and Circannual Rhythms in Behavioral Thermoregulation and Their Modifications by Pinealectomy in the White Sucker, *Catostomus commersoni* 146:235
Kavaliers M, Ralph CL (1980) Circadian Organization of an Animal Lacking a Pineal Organ; the Young American Alligator, *Alligator mississippiensis* 139:287
Kawamura H, see Ebihara S
Kawamura H, see Inouye ST
Keeton WT, see Papi F, et al
Keeton WT, see Waldvogel JA, et al
Kehl W, see Ewert J-P
Keifer J, see Stein PSG, et al
Keller R (1977) Comparative Electrophoretic Studies of Crustacean Neurosecretory Hyperglycemic and Melanophore-stimulating Hormones from Isolated Sinus Glands 122:359
Keller R (1981) Purification and Amino Acid Composition of the Hyperglycemic Neurohormone from the Sinus Gland of *Orconectes limosus* and Comparison with the Hormone from *Carcinus maenas* 141:445
Keller R, Schmid E (1979) In Vitro Secretion of Ecdysteroids by Y-Organs and Lack of Secretion by Mandibular Organs of the Crayfish Following Molt Induction 130:347
Kelly TJ, see Patterson JL, et al
Kempter B, see Markl J
Kempter B, see Markl J, et al
Kenagy GJ (1978) Seasonality of Endogenous Circadian Rhythms in a Diurnal Rodent *Ammosphermophilus leucurus* and a Nocturnal Rodent *Dipodomys merriami* 128:21
Kenagy GJ (1980) Interrelation of Endogenous Annual Rhythms of Reproduction and Hibernation in the Golden-Mantled Ground Squirrel 135:333
Kenagy GJ (1981) Effects of Day Length, Temperature, and Endogenous Control on Annual Rhythms of Reproduction and Hibernation in Chipmunks (*Eutamias* spp.) 141:369
Kenagy GJ (1981) Endogenous Annual Rhythm of Reproductive Function in the Non-Hibernating Desert Ground Squirrel *Ammospermophilus leucurus* 142:251

Kenagy GJ, Bartholomew GA (1979) Effects of Day Length and Endogenous Control on the Annual Reproductive Cycle of the Antelope Ground Squirrel, *Ammospermophilus leucurus* 130:131
Kennedy D, see Fricke RA, et al
Kepper J, see Ewert J-P, et al
Kern MD, see deGraw WA, et al
Kesbeke F, see Thillart G van den, et al.
Kesbeke F, see Waarde A van, et al
Kettembeil S, see Rübsamen K
Kévers C, Péqueux A, Gilles R (1979) Effects of an Hypo-Osmotic Shock on Na^+, K^+ and Cl^- Levels in Isolated Axons of *Carcinus maenas* 129:365
Keyser KT, Frazer BM, Lent CM (1982) Physiological and Anatomical Properties of Leydig Cells in the Segmental Nervous System of the Leech 146:379
Kick SA (1982) Target-Detection by the Echolacting Bat, *Eptesicus fuscus* 145:431
Kien J (1979) Variability of Locust Motoneuron Responses to Sensory Stimulation: A Possible Substrate for Motor Flexibility 134:55
Kien J (1980) Mechanisms of Motor Control by Plurisegmental Interneurons in Locusts 140:303
Kien J (1980) Morphology of Locust Neck Muscle Motoneurons and Some of Their Inputs 140:321
Kien J, Altman JS (1979) Connections of the Locust Wing Tegulae with Metathoracic Flight Motoneurons 133:299
Kijima H, see Hirakawa Y
Kilbert K (1979) Geräuschanalyse der Tanzlaute der Honigbiene (*Apis mellifica*) in unterschiedlichen magnetischen Feldsituationen 132:11
Kiley JP, Kuhlmann WD, Fedde MR (1982) Ventilatory and Blood Gas Adjustments in Exercising Isothermic Ducks 147:107
Kilgore DL Jr, Boggs DF, Birchard GF (1979) Role of the *Rete Mirabile Ophthalmicum* in Maintaining the Body-to-Brain Temperature Difference in Pigeons 129–119
Kilgore DL Jr, see Boggs DF
Kim YS, see Denia A, et al
Kimmel CB, Eaton RC, Powell SL (1980) Decreased Fast-Start Performances of Zebrafish Larvae Lacking Meuthner Neurons 140:343
Kimmel CB, see Eaton RC
King JR, see deGraw WA, et al
King JR, see Walsberg GE, et al
King SL, see Kutchai H, et al
Kinnamon SC, see Kammer AE
Kinne R, see Eveloff J, et al
Kirk MD, Glantz RM (1981) Impulse Pattern Generation in a Crayfish Abdominal Postural Motoneuron 141:183
Kirk MD, Waldrop B, Glantz RM (1982) The Crayfish Sustaining Fibers. I. Morphological Representation of Visual Receptive Fields in the Second Optic Neuropil 146:175
Kirk MD, Waldrop BR, Glantz RM (1983) The Crayfish Sustaining Fibers. II. Responses to Illumination, Membrane Properties and Adaptation 150:419
Kirk MD, see Glantz RM
Kirsch R, see Colin DA, et al
Kirschbaum F, see Westby GWM
Kirschenlohr HL, see Aicher B, et al
Kirschfeld K, Feiler R, Franceschini N (1978) A Photostable Pigment within the Rhabdomere of Fly Photoreceptors No. 7 125:275
Kirschfeld K, see Hardie RC, et al
Kirschfeld K, see McIntyre P
Kirschfeld K, see Vogt K, et al
Kitajima M, Hanai K (1983) Two Different Components of the Feeding Response Elicited by Trypsin in *Hydra japonica* 150:521
Klages G, Emmerich H (1979) Juvenile Hormone Metabolism and Juvenile Hormone Esterase Titer in Hemolymph and Peripheral Tissues of *Drosophila hydei* 132:319
Klärner D, Barth FG (1982) Vibratory Signals and Prey Capture in Orb-Weaving Spiders (*Zygiella x-notata, Nephila clavipes*; Araneidae) 148:445
Kleindienst H-U, Koch UT, Wohlers DW (1981) Analysis of the Cricket Auditory System by Acoustic Stimulation Using a Closed Sound Field 141:283
Klomfaß J, see Maaz G, et al
Kluytmans JH, Graft M van, Janus J, Pieters H (1978) Production and Excretion of Volatile Fatty Acids in the Sea Mussel *Mytilus edulis* L. 123:163
Knudsen EI, Blasdel GG, Konishi M (1979) Sound Localization by the Barn Owl (*Tyto alba*) Measured with the Search Coil Technique 133:1
Knudsen EI, Konishi M (1979) Mechanisms of Sound Localization in the Barn Owl (*Tyto alba*) 133:13
Koban M, Feist DD (1982) The Effect of Cold on Norepinephrine Turnover in Tissues of Seasonally Acclimatized Redpolls (*Carduelis flammea*) 146:137
Kobayashi M, Ando M (1979) Evidence of an Electrogenic Sodium Pump in Molluscan Radular Muscle Cells 132:141
Koch UT (1980) Analysis of Cricket Stridulation Using Miniature Angle Detectors 136:247
Koch UT, Koester J (1982) Time Sharing of Heart Power: Cardiovascular Adaptations to Food-Arousal in *Aplysia* 149:31
Koch UT, see Kleindienst H-U, et al
Koenig JH, Ikeda K (1983) Characterization of the Intracellularly Recorded Response of Identified Flight Motor Neurons in *Drosophila* 150:295
Koenig JH, Ikeda K (1983) Reciprocal Excitation Between Identified Flight Motor Neurons in *Drosophila* and Its Effect on Pattern Generation 150:305
Koester J, see Dieringer N, et al
Koester J, see Koch UT
Koizumi O, Haraguchi Y, Ohuchida A (1983) Reaction Chain in Feeding Behavior of *Hydra*: Different Specificities of Three Feeding Responses 150:99
Koizumi O, Maeda N (1981) Rise of Feeding Threshold in Satiated *Hydra* 142:75
Kolb G, Scherer C (1982) Experiments on Wavelength Specific Behavior of *Pieris brassicae* L. During Drumming and Egg-Laying 149:325
Kondo H (1978) Efferent System of the Lateral Ocellus in the Dragonfly: Its Relationships with the Ocellar Afferent Units, the Compound Eyes, and the Wing Sensory System 125:341
Kong K-L, Goldsmith TH (1977) Photosensitivity of Retinular Cells in White-eyed Crayfish (*Procambarus clarkii*) 122:273
Konishi M, see Knudsen EI
Konishi M, see Knudsen EI, et al
Konishi M, see Moiseff A
Koopowitz H, see Solon MH
Kooyman GL, Wahrenbrock EA, Castellini MA, Davis RW, Sinnett EE (1980) Aerobic and Anaerobic Metabolism During Voluntary Diving in Weddell Seals: Evidence of Preferred Pathways from Blood Chemistry and Behavior 138:335
Köppl R, see Wieczorek H
Kormanik GA, Cameron JN (1981) Ammonia Excretion in the Seawater Blue Crab (*Callinectes sapidus*) Occurs by Diffusion, and Not Na^+/NH_4^+ Exchange 141:457
Kornerup S, see Johansen K, et al
Kovac MP, Davis WJ (1980) Reciprocal Inhibition Between Feeding and Withdrawal Behaviors in *Pleurobranchaea* 139:77
Kovac MP, see Bicker G, et al
Koyama H, see Lewis ER, et al
Kramer AP (1981) The Nervous System of the Glossiphoniid Leech *Haementeria ghilianii*. II. Synaptic Pathways Controlling Body Wall Shortening 144:449
Kramer AP, Goldman JR (1981) The Nervous System of the Glossiphoniid Leech *Haementeria ghilianii*. I. Identification of Neurons 144:435
Kramer B, Tautz J, Markl H (1981) The EOD Sound Response in Weakly Electric Fish 143:435
Kramer DL, see Graham JB, et al
Kramer JJ de, see Molen JN vd, et al
Krasnow R, Dunlap JC, Taylor W, Hastings JW, Vetterling W, Gooch V (1980) Circadian Spontaneous Bioluminescent Glow and Flashing of *Gonyaulax polyedra* 138:19
Krasnow R, see Taylor W, et al
Kreithen ML, Quine DB (1979) Infrasound Detection by the Homing Pigeon: A Behavioral Audiogram 129:1
Kreithen ML, see Quine DB
Kretz R (1979) A Behavioural Analysis of Colour Vision in the Ant *Cataglyphis bicolor* (Formicidae, Hymenoptera) 131:217
Krieger NR, see Sulzman FM, et al
Kristan Jr WB, see Mason A
Kristensen E (1981) Direct Measurement of Ventilation and Oxygen Uptake in Three

Species of Tubicolous Polychaetes (*Nereis* spp.) 145:45
Kronenberg F, Heller HC (1982) Colonial Thermoregulation in Honey Bees (*Apis mellifera*) 148:65
Krug H, see Ewert J-P, et al
Kuffler DP (1978) Neuromuscular Transmission in Longitudinal Muscle of the Leech *Hirudo medicinalis* 124:333
Kuhlmann WD, Fedde MR (1979) Intrapulmonary Receptors in the Bullfrog: Sensitivity to CO_2 132:69
Kuhlmann WD, see Kiley JP, et al
Kühne R, see Kalmring K
Kühne R, see Kalmring K, et al
Kumar TP, see Reddy GR, et al
Kumar V, see Tewary PD
Kumar VSN, see Mote MI, et al
Kupfermann I, see Susswein AJ, et al
Küppers J, Thurm U (1979) Active Ion Transport by a Sensory Epithelium. I. Transepithelial Short Circuit Current, Potential Difference, and Their Dependence on Metabolism 134:131
Kuppert P, Wilhelm S, Spindler K-D (1978) Demonstration of Cytoplasmic Receptors for the Molting Hormones in Crayfish 128:95
Kuramoto T, Kuwasawa K (1980) Ganglionic Activation of the Myocardium of the Lobster, *Panulirus japonicus* 139:67
Kürten L, Schmidt U (1982) Thermoperception in the Common Vampire Bat (*Desmodus rotundus*) 146:223
Kuster JE, French AS (1983) Sensory Transduction in a Locust Multipolar Joint Receptor: The Dynamic Behaviour Under a Variety of Stimulus Conditions 150:207
Kuster JE, see French AS
Kutchai H, Ross TF, Dunning DM, Martin M, King SL (1978) Developmental Changes in the Fatty Acid Composition and Cholesterol Content of Chicken Heart Plasma Membrane 125:151
Kuwasawa K, see Kuramoto T

L

Labhart T (1980) Specialized Photoreceptors at the Dorsal Rim of the Honeybee's Compound Eye: Polarizational and Angular Sensitivity 141:19
Lacy R, Lynch CB, Lynch GR (1978) Developmental and Adult Acclimation Effects of Ambient Temperature on Temperature Regulation of Mice Selected for High and Low Levels of Nest-Building 123:185
Lafont R, see Beydon P, et al
Lafont R, see Lhonoré J, et al
Lahitette P, see Pic P
Laing DG, Panhuber H (1978) Neural and Behavioral Changes in Rats Following Continuous Exposure to an Odor 124:259
Laitman RS, Turek FW (1979) The Effect of Pinealectomy on Entrainment of the Locomotor Activity Rhythm in Sparrows Maintained on Various Short Days 134:339
Lall AB, Chapman RM, Trouth CO, Holloway JA (1980) Spectral Mechanisms of the Compound Eye in the Firefly *Photinus pyralis* (Coleoptera: Lampyridae) 135:21
Lall AB, Lord ET, Trouth CO (1982) Vision in the Firefly *Photuris lucicrescens* (Coleoptera: Lampyridae): Spectral Sensitivity and Selective Adaptation in the Compound Eye 147:195
Land MF (1980) Eye Movements and the Mechanism of Vertical Steering in Euphausiid Crustacea 137:255
Land MF (1981) Optics of the Eyes of *Phronima* and Other Deep-Sea Amphipods 145:209
Land MF, Burton FA, Meyer-Rochow VB (1979) The Optical Geometry of Euphausiid Eyes 130:49
Land MF, see Collett TS
Lang H-G, see Horn E
Lang K, see Mrosovsky N, et al
Langberg JJ, see Westin J, et al
Lange GD, Hartline PH, Hurley AC (1979) Retinal Responses in *Nautilus* 134:281
Lange GD, see Hartline PH, et al
Langer H, Hamann B, Meinecke CC (1979) Tetrachromatic Visual System in the Moth *Spodoptera exempta* (Insecta: Noctuidae). Preliminary Note 129:235
Langer H, see Rivera ME
Langer H, see Schlecht P, et al
Langner G, Scheich H (1978) Active Phase Coupling in Electric Fish: Behavioral Control with Microsecond Precision 128:235
Langner G, see Bonke D, et al
Langner G, see Scheich H, et al
Lanier GN, see Mustaparta H, et al
Lapennas GN, Reeves RB (1982) Respiratory Properties of Blood of the Gray Seal, *Halichoerus grypus* 149:49
Larimer JL, Smith JTF (1980) Circadian Rhythm of Retinal Sensitivity in Crayfish: Modulation by the Cerebral and Optic Ganglia 136:313
Larimer JL, see Miall RC
Larimer JL, see Williams BJ
Larsen ME, see Olivo RF
Larsen ON (1981) Mechanical Time Resolution in Some Insect Ears. II. Impulse Sound Transmission in Acoustic Tracheal Tubes 143:297
Larsen ON, Michelsen A (1978) Biophyscis of the Ensiferan Ear. III. The Cricket Ear as a Four-Input System 123:217
Larsen ON, see Michelsen A
Larsen ON, see Schiolten P, et al
Larsen ON, see Seymour C, et al
Lau CGY, see Denia A, et al
Lauf PK (1982) Evidence for Chloride Dependent Potassium and Water Transport Induced by Hyposmotic Stress in Erythrocytes of the Marine Teleost, *Opsanus tau* 146:9
Laughlin S, Blest AD, Stowe S (1980) The Sensitivity of Receptors in the Posterior Median Eye of the Nocturnal Spider, *Dinopis* 141:53
Laughlin SB, Hardie RC (1978) Common Strategies for Light Adaptation in the Peripheral Visual Systems of Fly and Dragonfly 128:319
Laughlin SB, see Matić T
Lavender BA, see Simmons JA, et al
Lavender WA, see Eaton RC, et al
Lavender WA, see Simmons JA, et al
Laverty G, Clark NB (1981) Renal Clearance of Phosphate and Calcium in the Fresh-Water Turtle: Effects of Parathyroid Hormone 141:463
Lawrenz H, see Rübsamen K, et al
Leader JP, Bedford JJ (1978) Volume Regulation in vitro of Muscle Fibres of the Crab, *Hemigrapsus edwardsi* 128:153
Leader JP, see Bedford JJ
Leatherland JF, see Milne RS
LeBlanc N, see Cosens D
Lechène C, see Peterson SK, et al
Lecker S, see Dagan D, et al
Lee AK, see Baldwin J
Lee D, see Davis WJ, et al
Lee MY, Huebers H, Martin AW, Finch CA (1978) Iron Metabolism in a Spider, *Dugesiella hentzi* 127:349
Leggett LMW (1979) A Retinal Substrate for Colour Discrimination in Crabs 133:159
Leggett LMW, Stavenga DG (1981) Diurnal Changes in Angular Sensitivity of Crab Photoreceptors 144:99
Lemire M, Grenot C, Vernet R (1982) Water and Electrolyte Balance of Free-Living Saharan Lizards, *Uromastix acanthinurus* (Agamidae) 146:81
Lemons DE, see Crawshaw LI, et al
Leng-Peschlow E, Marty J (1979) Absorption of Water, Electrolytes and Volatile Fatty Acids in the Rabbit Caecal Pouch 133:205
Lennard PR, see Stein PSG, et al
Lent CM, see Keyser KT, et al
Lent CM, see Yang J
Leonard JL (1980) Temporal Organization of Swimming Activity in *Sarsia tubulosa* M. Sars (Hydrozoa) 136:219
Leray C, Colin DA, Florentz A (1981) Time Course of Osmotic Adaptation and Gill Energetics of Rainbow Trout (*Salmo gairdneri* R.) Following Abrupt Changes in External Salinity 144:175
Leray C, see Colin DA, et al
Leverenz EL, see Lewis ER, et al
Levine RB, Murphey RK (1980) Pre- and Postsynaptic Inhibition of Identified Giant Interneurons in the Cricket (*Acheta domesticus*) 135:269
Levy B, Sivak JG (1980) Mechanisms of Accommodation in the Bird Eye 137:267
Levy B, see Sivak JG, et al
Lewis B, see Hutchings M
Lewis B, see Kalmring K, et al
Lewis B, see Seymour C, et al
Lewis ER, Leverenz EL, Koyama H (1982) The Tonotopic Organization of the Bullfrog Amphibian Papilla, an Auditory

Organ Lacking a Basilar Membrane 145:437
Lhonoré J, Bouthier A, Beydon P, Pennetier JL, Lafont R (1980) The Epidermal Cell Cycle During the Last Larval Instar of *Pieris brassicae* (Lepidoptera). I. Cell Ultrastructure and Variations in Pigment Content 136:11
Lhonoré J, see Beydon P, et al
Lickey ME, Wozniak JA (1979) Circadian Organization in *Aplysia* Explored with Red Light, Eye Removal and Behavioral Recording 131:169
Liebsch H, see Renwrantz L, et al
Lillo RS (1979) Recovery from Diving Bradycardia in Bullfrogs 133:193
Lillywhite PG (1977) Single Photon Signals and Transduction in an Insect Eye 122:189
Lillywhite PG (1978) Coupling between Locust Photoreceptors Revealed by a Study of Quantum Bumps 125:13
Lindauer M, see Martin H
Lindauer M, see Martin U, et al
Lindauer M, see Rossel S, et al
Lindstedt SL (1980) Regulated Hypothermia in the Desert Shrew 137:173
Lingle C (1980) The Sensitivity of Decapod Foregut Muscles to Acetylcholine and Glutamate 138:187
Linzen B, see Autrum H
Linzen B, see Markl J, et al
Livingstone DR, see Thompson RJ, et al
Livingstone DR, see Zwaan A de, et al
Lloyd PE (1978) Distribution and Molecular Characteristics of Cardioactive Peptides in the Snail, *Helix aspersa* 128:269
Lloyd PE (1978) Neurohormonal Control of Cardiac Activity in the Snail, *Helix aspersa* 128:277
Lloyd PE (1980) Biochemical and Pharmacological Analyses of Endogenous Cardioactive Peptides in the Snail, *Helix aspersa* 138:265
Lloyd PE (1980) Modulation of Neuromuscular Activity by 5-Hydroxytryptamine and Endogenous Peptides in the Snail, *Helix aspersa* 139:333
Lloyd PE (1980) Mechanisms of Action of 5-Hydroxytryptamine and Endogenous Peptides on a Neuromuscular Preparation in the Snail, *Helix aspersa* 139:341
Lock A, Collett T (1979) A Toad's Devious Approach to Its Prey: A Study of Some Complex Uses of Depth Vision 131:179
Loew ER, see Sillman AJ, et al
Loewe R (1978) Hemocyanins in Spiders. V. Fluorimetric Recording of Oxygen Binding Curves, and Its Application to the Analysis of Allosteric Interactions in *Eurypelma californicum* Hemocyanin 128:161
Loewe R, Brauer de Eggert H (1979) Blood Gas Analysis and Acid-Base Status in the Hemolymph of a Spider (*Eurypelma californicum*) – Influence of Temperature 134:331
Loftus R, Corbière-Tichané G (1981) Antennal Warm and Cold Receptors of the Cave Beetle, *Speophyes lucidulus* Delar., in Sensilla with a Lamellated Dendrite. I. Response to Sudden Temperature Change 143:443
Lord ET, see Lall AB, et al
Lorton ED, see Mellon DeF Jr
Lucking M, see Johnston I
Luiten PGM, see Ballintijn CM, et al
Lunteren E van (1977) Inhibition of an Abdominal Proprioceptive Reflex in Crayfish 122:289
Lupatkin J, see Arch S, et al
Lutz PL, see Bushnell PG, et al
Lykkeboe G, Weber RE (1978) Changes in the Respiratory Properties of the Blood in the Carp, *Cyprinus carpio*, Induced by Diurnal Variation in Ambient Oxygen Tension 128:117
Lykkeboe G, see Brix O, et al
Lykkeboe G, see Johansen K
Lykkeboe G, see Johansen K, et al
Lykkeboe G, see Tetens V
Lykkeboe G, see Weber RE
Lynch CB, see Lacy R, et al
Lynch GR, White SE, Grundel R, Berger MS (1978) Effects of Photoperiod, Melatonin Administration and Thyroid Block on Spontaneous Daily Torpor and Temperature Regulation in the White-Footed Mouse, *Peromyscus leucopus* 125:157
Lynch GR, see Glass JD
Lynch GR, see Lacy R, et al

M

Maaz G, Nagy K, Stieve H, Klomfaß J (1981) The Electrical Light Response of the *Limulus* Ventral Nerve Photoreceptor, a Superposition of Distinct Components – Observable by Variation of the State of Light Adaptation 141:303
Macadar AW, Rausch LJ, Wenzel BM, Hutchison LV (1980) Electrophysiology of the Olfactory Pathway in the Pigeon 137:39
Macdonald JA (1981) Temperature Compensation in the Peripheral Nervous System: Antarctic vs Temperate Poikilotherms 142:411
Macdonald JA, Montgomery JC (1982) Thermal Limits of Neuromuscular Function in an Antarctic Fish 147:237
Machemer H, see Murakami A
Machemer H, see Ogura A
Machemer H, see Peyer JE de
Machen TE, see Foskett JK, et al
Mack J, see Engelmann W
Mackie GO, see Prosser CL
Maeda N, see Koizumi O
Maes FW, Bijpost SCA (1979) Classical Conditioning Reveals Discrimination of Salt Taste Quality in the Blowfly *Calliphora vicina* 133:53
Maetz J, see Pic P
Magni F, Pellegrino M (1978) Neural Mechanisms Underlying the Segmental and Generalized Cord Shortening Reflexes in the Leech 124:339
Mainoya JR (1982) Water and NaCl Absorption by the Intestine of the Tilapia *Sarotherodon mossambicus* Adapted to Fresh Water or Seawater and the Possible Role of Prolactin and Cortisol 146:1
Maldonado H, Miralto A (1982) Effect of Morphine and Naloxone on a Defensive Response of the Mantis Shrimp (*Squilla mantis*) 147:455
Maldonado H, see D'Alessio G, et al
Maloiy GMO, see Johansen K, et al
Maloiy GMO, see Müller EF, et al
Maloiy GMO, see Skadhauge E, et al
Maloiy GMO, see Wood SC, et al
Mane SD, Chippendale GM (1981) Hydrolysis of Juvenile Hormone in Diapausing and Non-Diapausing Larvae of the Southwestern Corn Borer, *Diatraea grandiosella* 144:205
Manley GA, see Eatock RA
Manley GA, see Eatock RA, et al
Manning E, see Nottebohm F, et al
Manteuffel G, Himstedt W (1978) The Aerial and Aquatic Visual Acuity of the Optomotor Response in the Crested Newt (*Triturus cristatus*) 128:359
Marčelja L, see Horridge GA, et al
Marčelja S (1979) Optimal Lateral Interactions in a Compound Eye 132:159
Margolin Y, see Dagan D, et al
Mariotti G, see Papi F, et al
Markl A, see Markl J, et al
Markl H, see Aicher B, et al
Markl H, see Kramer B, et al
Markl H, see Masters WM, et al
Markl H, see Tautz J, et al
Markl J (1980) Hemocyanins in Spiders. XI. The Quaternary Structure of *Cupiennius* Hemocyanin 140:199
Markl J, Hofer A, Bauer G, Markl A, Kempter B, Brenzinger M, Linzen B (1979) Subunit Heterogeneity in Arthropod Hemocyanins: II. Crustacea 133:167
Markl J, Kempter B (1981) Subunit Heterogeneity in Crustacean Hemocyanins as Deduced by Two-Dimensional Immunoelectrophoresis 141:495
Markl J, Markl A, Schartau W, Linzen B (1979) Subunit Heterogeneity in Arthropod Hemocyanins: I. Chelicerata 130:283
Markovich AM, see Popov AV
Markovich AM, see Popov AV, et al
Marsh RL (1981) Catabolic Enzyme Activities in Relation to Premigratory Fattening and Muscle Hypertrophy in the Gray Catbird (*Dumetella carolinensis*) 141:417
Marsh RL, Wickler SJ (1982) The Role of Muscle Development in the Transition to Endothermy in Nestling Bank Swallows, *Riparia riparia* 149:99
Martin AW, see Huebers HA, et al
Martin AW, see Lee MY, et al
Martin AW, see Stewart DM
Martin FG, Mote MI (1980) An Equivalent Circuit for the Quantitative Description of

Inter-Receptor Coupling in the Retina of the Desert Ant *Cataglyphis bicolor* 139:277
Martin FG, Mote MI (1982) Color Receptors in Marine Crustaceans: A Second Spectral Class of Retinular Cell in the Compound Eyes of *Callinectes* and *Carcinus* 145:549
Martin GR (1982) A Owl's Eye: Schematic Optics and Visual Performance in *Strix aluco* L. 145:341
Martin H, Lindauer M (1977) Der Einfluß des Erdmagnetfeldes auf die Schwereorientierung der Honigbiene (*Apis mellifica*) 122:145
Martin H, see Martin U, et al
Martin M, see Kutchai H, et al
Martin R, see Hafner GS, et al
Martin U, Martin H, Lindauer M (1978) Transplantation of a Time-Signal in Honeybees 124:193
Marty J, see Leng-Peschlow E
Marzelli GA, Wilkens LA (1979) Centrally-Mediated Synaptic Input: Effects on an Identified Crayfish Mechanosensory Interneuron 134:1
Maskrey M, see Nicol SC
Mason A, Kristan Jr WB (1982) Neuronal Excitation, Inhibition and Modulation of Leech Longitudinal Muscle 146:527
Mason R, see Groos GA
Massabuau J-C, Eclancher B, Dejours P (1980) Ventilatory Reflex Response to Hyperoxia in the Crayfish, *Astacus pallipes* 140:193
Masters WM (1980) Insect Disturbance Stridulation: Characterization of Airborne and Vibrational Components of the Sound 135:259
Masters WM, Aicher B, Tautz J, Markl H (1982) A New Type of Water Vibration Receptor on the Crayfish Antenna. II. Model of Receptor Function 149:409
Masters WM, Tautz J, Fletcher NH, Markl H (1983) Body Vibration and Sound Production in an Insect (*Atta sexdens*) Without Specialized Radiating Structures 150:239
Masters WM, see Aicher B, et al
Masters WM, see Tautz J, et al
Matera EM, see Bicker G, et al
Matič T, Laughlin SB (1981) Changes in the Intensity-Response Function of an Insect's Photoreceptors Due to Light Adaptation 145:169
Matič T, see Horridge GA, et al
Matsubara J, Heiligenberg W (1978) How Well Do Electric Fish Electrolocate under Jamming 125:285
Matsubara J, see Heiligenberg W, et al
Matsubara J, see Partridge BL, et al
Matsubara JA (1982) Physiological Cell Types in the Posterior Lateral Line Lobes of Weakly Electric Fish: Neural Correlates of Electrolocation Under Jamming 149:339
Matsuo T, see Hoshimiya N, et al
Matthews G, Wickelgren WO (1978) Trigeminal Sensory Neurons of the Sea Lamprey 123:329
Mauchamp B, see Beydon P, et al
Mautz WJ (1982) Correlation of Both Respiratory and Cutaneous Water Losses of Lizards with Habitat Aridity 149:25
Maxwell LC, see Carey C, et al
May B, see Bech C, et al
May B, see Sieland M, et al
May ML (1981) Wingstroke Frequency of Dragonflies (Odonata: Anisoptera) in Relation of Temperature and Body Size 144:229
McArdle HJ, Johnston IA (1980) Evolutionary Temperature Adaptation of Fish Sarcoplasmic Reticulum 135:157
McCarthy C, see Arch S, et al
McClune MC, see Bullock TH, et al
McCourt ME, see Jacobs GH, et al
McCrone EJ, Minnen J van, Sokolove PG (1981) Slug Reproductive Maturation Hormone: In vivo Evidence for Long-Day Stimulation of Secretion from Brains and Cerebral Ganglia 143:311
McCrone EJ, Sokolove PG (1979) Brain-Gonad Axis and Photoperiodically-Stimulated Sexual Maturation in the Slug, *Limax maximus* 133:117
McCrone EJ, see Sokolove PG
McGuire G, see Driedzic WR, et al
McIntyre P, Kirschfeld K (1981) Absorption Properties of a Photostable Pigment (P456) in Rhabdomere 7 of the Fly 143:3
McIntyre P, Kirschfeld K (1982) Chromatic Aberration of a Dipteran Corneal Lens 146:493
McIntyre P, see Blest AD, et al
McIntyre PD, see Hardie RC, et al
McKeown BA, see Brewer KJ
McMahon B, Sinclair F, Hassall CD, deFur PL, Wilkes PRH (1978) Ventilation and Control of Acid-Base Status During Temperature Acclimation in the Crab, *Cancer magister* 128:109
McMahon BR, see Booth CE, et al
McNab BK (1978) The Comparative Energetics of Neotropical Marsupials 125:115
McWilliams PG, Potts WTW (1978) The Effects of pH and Calcium Concentrations on Gill Potentials in the Brown Trout, *Salmo trutta* 126:277
Meffert P, see Smola U
Meinecke CC, see Langer H, et al
Meinwald J, see Boppré M, et al
Meissl H, Ueck M (1980) Extraocular Photoreception of the Pineal Gland of the Aquatic Turtle *Pseudemys scripta elegans* 140:173
Meissl H, see Falcón J
Melichna J, Gutmann E, Havlíčková L, Štichová J, Herbrychová A (1978) Comparison of Contractile, Histo- and Biochemical Properties of Different Skeletal Muscles of the Brown Rat (*Rattus norvegicus*) with Those of the Domesticated Wistar Rat 126:263
Mellon DeF Jr (1977) The Anatomy and Motor Nerve Distribution of the Eye Muscles in the Crayfish 121:349
Mellon DeF Jr, Lorton ED (1977) Reflex Actions of the Functional Divisions in the Crayfish Oculomotor System 121:367
Mellon De F Jr, Stephens PJ (1979) The Motor Organization of Claw Closer Muscles in Snapping Shrimp 132:109
Mellon DeF Jr, see Stephens PJ
Melnyk RB, see Mrosovsky N, et al
Menaker M, see Davis FC
Menaker M, see Takahashi JS
Mendelsohn SA, Cherksey BD, Degnan KJ (1981) Adrenergic Regulation of Chloride Secretion Across the Opercular Epithelium: The Role of Cyclic AMP 145:29
Menzel R (1981) Achromatic Vision in the Honeybee at Low Light Intensities 141:389
Menzel R, see Erber J
Menzel R, see Mercer AR
Menzel R, see Rose R
Mercer AR, Menzel R (1982) The Effects of Biogenic Amines on Conditioned and Unconditioned Responses to Olfactory Stimuli in the Honeybee *Apis mellifera* 145:363
Merrill DP, Mongeon SA, Fisher S (1979) Distribution of Fluorescent Latex Particles Following Clearance from the Hemolymph of the Freshwater Crayfish, *Orconectes virilis* (Hagen) 132:363
Merrill GF, Rosolowsky M, Grover GJ (1979) Seasonal Variability in the Responses of the Domestic Fowl, *Gallus domesticus*, to Endotoxemia 134:287
Meschini E (1983) Pigeon Navigation: Some Experiments on the Importance of Olfactory Cues at Short Distances from the Loft 150:493
Messing JM, see Crawshaw LI, et al
Mets L, see Buck J, et al
Meulen JW vd, see Molen JN vd, et al
Meyer DL, Graf W, Seydlitz-Kurzbach U v (1979) The Role of Integrators in Maintaining Actively Assumed Abnormal Postures. A Study of Postural Mechanisms in Geckos 131:235
Meyer DL, see Graf W
Meyer E, see Wehner R
Meyer HW (1978) Phototaxis in the Walking Male and Female Fly (*Calliphora erythrocephala* Meig.). I. The Spontaneous Phototactic Reaction 123:307
Meyer JH (1982) Behavioral Responses of Weakly Electric Fish to Complex Impedances 145:459
Meyer J-U, see Kaul R, et al
Meyer-Rochow VB (1980) Electrophysiologically Determined Spectral Efficiencies of the Compound Eye and Median Ocellus in the Bumblebee *Bombus hortorum tarhakimalainen* (Hymenoptera, Insecta) 139:261
Meyer-Rochow VB, see Land MF, et al
Miall RC, Larimer JL (1982) Interneurons Involved in Abdominal Posture in Crayfish: Structure, Function and Command Fiber Responses 148:159
Michelsen A, Larsen ON (1978) Biophysics of the Ensiferan Ear. I. Tympanal Vibra-

tions in Bushcrickets (Tettigoniidae) Studied with Laser Vibrometry 123:193
Michelsen A, see Larsen ON
Michelsen A, see Sand O
Michelsen A, see Schiolten P, et al
Michelsen A, see Seymour C, et al
Midtgård U, see Bech C
Milde J (1981) Graded Potentials and Action Potentials in the Large Ocellar Interneurons of the Bee 143:427
Miller KI, Holde KE Van (1981) The Effect of Environmental Variables on the Structure and Function of Hemocyanin from *Callianassa californiensis*. I. Oxygen Binding 143:253
Miller KI, Holde KE Van (1981) The Effect of Environmental Variables on the Structure and Function of Hemocyanin from *Callianassa californiensis*. II. Subunit Association-Dissociation Equilibrium 143:261
Miller LA, Degn HJ (1981) The Acoustic Behavior of Four Species of Vespertilionid Bats Studied in the Field 142:67
Miller LA, Olesen J (1979) Avoidance Behavior in Green Lacewings. I. Behavior of Free Flying Green Lacewings to Hunting Bats and Ultrasound 131:113
Miller LA, see Olesen J
Miller TA, see Irving SN
Milne RS, Leatherland JF (1978) Effect of Ovine TSH, Thiourea, Ovine Prolactin and Bovine Growth Hormone on Plasma Thyroxine and Tri-Iodothyronine Levels in Rainbow Trout, *Salmo gairdneri* 124:105
Mimura K (1978) Electrophysiological Evidence for Interaction between Retinula Cells in the Flesh-Fly 125:209
Mimura K (1981) Receptive Field Patterns in Photoreceptors of the Fly 141:349
Mimura K (1981) Phototactic Behaviour of Walking Flies in Response to Some Visual Patterns: Correlation with Receptive Field Patterns of Photoreceptors 144:75
Mimura K (1982) Discrimination of Some Visual Patterns in *Drosophila melanogaster* 146:229
Minnen J van, see McCrone EJ, et al
Miralto A, see Maldonado H
Mitchell BK, Gregory P (1979) Physiology of the Maxillary Sugar Sensitive Cell in the Red Turnip Beetle, *Entomoscelis americana* 132:167
Mitchell BK, Gregory P (1981) Physiology of the Lateral Galeal Sensillum in Red Turnip Beetle Larvae (*Entomoscelis americana* Brown): Responses to NaCl, Glucosinolates and Other Glucosides 144:495
Mitchell BK, see Sutcliffe JF
Mittelstaedt H, see Mittelstaedt M-L, et al
Mittelstaedt M-L, Mittelstaedt H, Mohren W (1979) Interaction of Gravity and Idiothetic Course Control in Millipedes 133:267
Mittenthal JE, see Smith PH
Miyazaki S (1980) The Ionic Mechanism of Action Potentials in Neurosecretory Cells and Non-Neurosecretory Cells of the Silkworm 140:43
Mizunami M, Yamashita S, Tateda H (1982) Intracellular Stainings of the Large Ocellar Second Order Neurons in the Cockroach 149:215
Moalli R, see Ultsch GR, et al
Mobbs PG, Guy RG, Goodman LJ, Chappell RL (1981) Relative Spectral Sensitivity and Reverse Purkinje Shift in Identified L Neurons of the Ocellar Retina 144:91
Mobbs PG, see Guy RG, et al
Mochizuki M, see Tazawa H, et al
Moffat AJM, Capranica RR (1978) Middle Ear Sensitivity in Anurans and Reptiles Measured by Light Scattering Spectroscopy 127:97
Moffat AJM, see Ehret G, et al
Mogensen F, Møhl B (1979) Sound Radiation Patterns in the Frequency Domain of Cries from a Vespertilionid Bat 134:165
Mohan PM, see Reddy GR, et al
Møhl B, see Mogensen F
Möhl B, Bacon J (1983) The Tritocerebral Commissure Giant (TCG) Wind-Sensitive Interneurone in the Locust. II. Directional Sensitivity and Role in Flight Stabilisation 150:453
Möhl B, Nachtigall W (1978) Proprioceptive Input on the Locust Flight Motor Revealed by Muscle Stimulation 128:57
Möhl B, see Bacon J
Mohneke R, Schneider H (1979) Effect of Temperature upon Auditory Thresholds in Two Anuran Species, *Bombina v. variegata* and *Alytes o. obstetricans* (Amphibia, Discoglossidae) 130:9
Mohren W, see Mittelstaedt M-L, et al
Moiseff A, Konishi M (1981) The Owl's Interaural Pathway Is Not Involved in Sound Localization 144:299
Mokrushov PA, see Frantsevich LI
Molen JN vd, Meulen JW vd, Kramer JJ de, Pasveer FJ (1978) Computerised Classification of Taste Cell Responses 128:1
Möller J (1978) Response Characteristics of Inferior Colliculus Neurons of the Awake CF-FM Bat *Rhinolophus ferrumequinum*. II. Two-Tone Stimulation 125:227
Möller J, Neuweiler G, Zöller H (1978) Response Characteristics of Inferior Colliculus Neurons of the Awake CF-FM Bat *Rhinolophus ferrumequinum*. I. Single-Tone Stimulation 125:217
Moller P, Szabo T (1981) Lesions in the Nucleus Mesencephali Exterolateralis. Effects on Electrocommunication in the Mormyrid Fish *Gnathonemus petersii* (Mormyriformes) 144:327
Mommsen TP (1978) Comparison of Digestive α-Amylases from Two Species of Spiders (*Tegenaria atrica* and *Cupiennius salei*) 127:355
Mongeon SA, see Merrill DP, et al
Montgomery JC, see Macdonald JA
Montinory C, see Ghidalia W, et al
Moody W Jr (1978) Gradual Increase in the Electrical Excitability of Crayfish Slow Muscle Fibers Produced by Anoxia or Uncouplers of Oxidative Phosphorylation 125:327
Moon TW, Johnston IA (1980) Starvation and the Activities of Glycolytic and Gluconeogenic Enzymes in Skeletal Muscles and Liver of the Plaice, *Pleuronectes platessa* 136:31
Moon TW, see Johnston IA
Moon TW, see Renaud JM
Moore MN, see Thompson RJ, et al
Moore PL, see Strickland ML, et al
Moore-Ede MC, see Sulzman FM, et al
Moring J (1978) Spectral Sensitivity of Monopolar Neurons in the Eye of *Calliphora* 123:335
Moring J, Järvilehto M (1977) Dark Recovery of Polarized Light Sensitive and Insensitive Receptor Cells in the Retina of the Fly 122:215
Moring J, Järvilehto M, Moring K (1979) The Onset of Light Adaptation in the Visual Cells of the Fly 132:153
Moring K, see Moring J, et al
Morrison PE, see Venkatesh K
Moser H, Ottoson D, Rydqvist B (1979) Step-Like Shifts of Membrane Potential in the Stretch Receptor Neuron of the Crayfish (*Astacus fluviatilis*) at High Temperatures 133:257
Mosinger JL, see Chapman KM, et al
Mote MI, Kumar VSN, Black KR (1981) 'On' Type Interneurons in the Optic Lobe of *Periplaneta americana*. II. Receptive Fields and Response Latencies 141:403
Mote MI, Rubin LJ (1981) 'On' Type Interneurons in the Optic Lobe of *Periplaneta americana*. I. Spectral Characteristics of Response 141:395
Mote MI, Wehner R (1980) Functional Characteristics of Photoreceptors in the Compound Eye and Ocellus of the Desert Ant, *Cataglyphis bicolor* 137:63
Mote MI, see Martin FG
Moulins M, see Robertson RM
Moysich F, see Kalmring K, et al
Mrosovsky N (1980) Circannual Cycles in Golden-Mantled Ground Squirrels: Phase Shift Produced by Low Temperatures 136:349
Mrosovsky N (1980) Circannual Cycles in Golden-Mantled Ground Squirrels: Experiments with Food Deprivation and Effects of Temperature on Periodicity 136:355
Mrosovsky N, Melnyk RB, Lang K, Hallonquist JD, Boshes M, Joy JE (1980) Infradian Cycles in Dormice (*Glis glis*) 137:315
Mrosovsky N, see Joy JE
Mudry KM, see Gerhardt HC
Muijser H (1979) The Receptor Potential of Retinular Cells of the Blowfly *Calliphora*: The Role of Sodium, Potassium and Calcium Ions 132:87
Müller EF, Kamau JMZ, Maloiy GMO (1979) O_2-Uptake, Thermoregulation and Heart Rate in the Springhare (*Pedetes capensis*) 133:187

Müller U, Schwartz E (1982) Influence of Single Neuromasts on Prey Localizing Behavior of the Surface Feeding Fish, *Aplocheilus lineatus* 149:399
Müller W, see Honegger H-W, et al
Mulloney B (1977) Organization of the Stomatogastric Ganglion of the Spiny Lobster. V. Coordination of the Gastric and Pyloric Systems 122:227
Murakami A, Machemer H (1982) Mechanoreception and Signal Transmission in the Lateral Ciliated Cells on the Gill of *Mytilus* 145:351
Murer H, see Eveloff J, et al
Murphey RK, see Levine RB
Murphey RK, see Sakaguchi DS
Murphey RK, see Tobias M
Mustafa T, Seuß J, Jørgensen JB, Hoffmann KH (1983) Gluconeogenesis in Facultative Anaerobic Invertebrates: Evidence of Oxalacetate Decarboxylation and Anaerobic End Product Incorporation into Glycogen from the Tissues of *Tubifex* sp. 149:477
Mustafa T, see Hoffmann KH, et al
Mustaparta H, Angst ME, Lanier GN (1977) Responses of Single Receptor Cells in the Pine Engraver Beetle, *Ips pini* (Say) (Coleoptera: Scolytidae) to Its Aggregation Pheromone, Ipsdienol, and the Aggregation Inhibitor, Ipsenol 121:343
Myrberg AA Jr, Spires JY (1980) Hearing in Damselfishes: An Analysis of Signal Detection Among Closely Related Species 140:135

N

Nachtigall W (1979) Gleitflug des Flugbeutlers *Petaurus breviceps papuanus*. II. Filmanalysen zur Einstellung von Gleitbahn und Rumpf sowie zur Steuerung des Gleitflugs 133:89
Nachtigall W (1979) Gleitflug des Flugbeutlers *Petaurus breviceps papuanus* (Thomas). III. Modellmessungen zum Einfluß des Fellbesatzes auf Umströmung und Luftkrafterzeugung 133:339
Nachtigall W (1979) Rasche Richtungsänderungen und Torsionen schwingender Fliegenflügel und Hypothesen über zugeordnete instationäre Strömungseffekte 133:351
Nachtigall W (1981) Der Vorderflügel großer Heuschrecken als Luftkrafterzeuger. I. Modellmessungen zur aerodynamischen Wirkung unterschiedlicher Flügelprofile 142:127
Nachtigall W, Bilo D (1980) Strömungsanpassung des Pinguins beim Schwimmen unter Wasser 137:17
Nachtigall W, Roth W (1983) Correlations Between Stationary Measurable Parameters of Wing Movement and Aerodynamic Force Production in the Blowfly (*Calliphora vicina* R.-D.) 150:251
Nachtigall W, see Möhl B
Nachtigall W, see Pfau HK
Nagy K, see Maaz G, et al
Narins PM (1982) Effects of Masking Noise on Evoked Calling in the Puerto Rican Coqui (Anura: Leptodactylidae) 147:439
Narins PM (1982) Behavioral Refractory Period in Neotropical Treefrogs 148:337
Narins PM, Capranica RR (1978) Communicative Significance of the Two-Note Call of the Treefrog *Eleutherodactylus coqui* 127:1
Nässel DR, Waterman TH (1979) Massive Diurnally Modulated Photoreceptor Membrane Turnover in Crab Light and Dark Adaptation 131:205
Nawata T, Sibaoka T (1979) Coupling Between Action Potential and Bioluminescence in *Noctiluca*: Effects of Inorganic Ions and pH in Vacuolar Sap 134:137
Neale E, see Hill MW, et al
Neas NP, see Hazel JR
Necker R, Reiner B (1980) Temperature-Sensitive Mechanoreceptors, Thermoreceptors and Heat Nociceptors in the Feathered Skin of Pigeons 135:201
Needham AD, see Dawson TJ
Neil DM, Barnes WJP, Burns MD (1982) Reflex Antennal Movements in the Spiny Lobster, *Palinurus elephas*. I. Properties of Reflexes and Their Interaction 147:259
Neil DM, Schöne H, Scapini F (1979) Leg Resistance Reaction as an Output and an Input. Reactions of the Spiny Lobster, *Palinurus vulgaris*, to Substrate Tilt VI 129:217
Neil DM, see Barnes WJP
Neil DM, see Scapini F, et al
Neil DM, see Schöne H, et al
Nelson DO, Prosser CL (1979) Effect of Preoptic Lesions on Behavioral Thermoregulation of Green Sunfish. *Lepomis cyanellus*, and of Goldfish, *Carassius auratus* 129:193
Nelson MC (1979) Sound Production in the Cockroach, *Gromphadorhina portentosa*: The Sound-Producing Apparatus 132:27
Nesbitt MN, see Peleg L, et al
Neuhaus HU, see Borbély AA
Neukirch A (1982) Dependence of the Life Span of the Honeybee (*Apis mellifica*) upon Flight Performance and Energy Consumption 146:35
Neumeyer C, see Edrich W, et al
Neumeyer C (1980) Simultaneous Color Contrast in the Honeybee 139:165
Neumeyer C (1981) Chromatic Adaptation in the Honeybee: Successive Color Contrast and Color Constancy 144:543
Neuweiler G, see Möller J, et al
Newby NA, see Brown TH
Nicol CJM, Johnston IA (1981) Energy Metabolism of Fast- and Slow-Twitch Skeletal Muscle in the Rat: Thyroid Hormone Induced Changes 142:465
Nicol SC, Maskrey M (1980) Thermoregulation, Respiration and Sleep in the Tasmanian Devil, *Sarcophilus harrisii* (Marsupialia: Dasyuridae) 140:241
Nicol SC, see Stahel CD
Niehaus M (1981) Flight and Flight Control by the Antennae in the Small Tortoiseshell (*Aglais urticae* L., Lepidoptera). II. Flight Mill and Free Flight Experiments 145:257
Niehaus M, see Gewecke M
Nielsen ET (1978) Structure of the Stridulation of *Orchelimum* (Orthoptera: Tettigoniidae) 126:343
Nikinmaa M, Tuurala H, Soivio A (1980) Thermoacclimatory Changes in Blood Oxygen Binding Properties and Gill Secondary Lamellar Structure of *Salmo gairdneri* 140:255
Nikinmaa M, see Soivio A, et al
Nikolajev G, see Frantsevich L, et al
Nilsson B, Pettersson K (1981) Sympathetic Nervous Control of Blood Flow in the Gills of the Atlantic Cod, *Gadus morhua* 144:157
Nilsson D-E (1982) The Transparent Compound Eye of *Hyperia* (Crustacea): Examination with a New Method for Analysis of Refractive Index Gradients 147:339
Nilsson D-E, Nilsson HL (1981) A Crustacean Compound Eye Adapted for Low Light Intensities (Isopoda) 143:503
Nilsson D-E, Odselius R (1981) A New Mechanism for Light-Dark Adaptation in the *Artemia* Compound Eye (Anostraca, Crustacea) 143:389
Nilsson HL, see Nilsson D-E
Nilsson S (1980) Sympathetic Nervous Control of the Iris Sphincter of the Atlantic Cod, *Gadus morhua* 138:149
Nilsson S, see Pettersson K
Nilsson S, see Wahlqvist I
Nolen TG, see Camhi JM
Nomoto S, Rautenberg W, Iriki M (1983) Temperature Regulation During Exercise in the Japanese Quail (*Coturnix coturnix japonica*) 149:519
Northcutt RG, see Bullock TH
Northmore DPM, Williams B, Vanegas H (1983) The Teleostean Torus Longitudinalis: Responses Related to Eye Movements, Visuotopic Mapping, and Functional Relations with the Optic Tectum 150:39
Nottebohm F, Manning E, Nottebohm ME (1979) Reversal of Hypoglossal Dominance in Canaries Following Unilateral Syringeal Denervation 134:227
Nottebohm ME, see Nottebohm F, et al

O

Obara S, see Okitsu S, et al
Obert H-J, see Brzoska J
Odselius R, see Nilsson D-E
Oduleye SO, Claiborne JB, Evans DH (1982) The Isolated, Perfused Head of the Toadfish, *Opsanus beta*. I. Vasoactive Responses to Cholinergic and Adrenergic Stimulation 149:107
Oduleye SO, Evans DH (1982) The Isolated, Perfused Head of the Toadfish, *Opsanus beta*. II. Effects of Vasoactive Drugs on Unidirectional Water Flux 149:115
Oeckinghaus H, Schwartzkopff J (1983) Elec-

trical and Acoustical Activation of the Middle Ear Muscle in a Songbird 150:61
O'Farrell MJ, see Simmons JA
O'Farrell MJ, see Simmons JA, et al
Ogura A, Machemer H (1980) Distribution of Mechanoreceptor Channels in the *Paramecium* Surface Membrane 135:233
Ohm J, see DeVoe RD, et al
Ohuchida A, see Koizumi O, et al
Oikari A, see Bushnell PG, et al
Okitsu S, Umekita S, Obara S (1978) Ionic Compositions of the Media Across the Sensory Epithelium in the Ampullae of Lorenzini of the Marine Catfish, *Plotosus* 126:115
Olberg RM (1981) Object- and Self-Movement Detectors in the Ventral Nerve Cord of the Dragonfly 141:327
Olberg RM (1981) Parallel Encoding of Direction of Wind, Head, Abdomen, and Visual Pattern Movement by Single Interneurons in the Dragonfly 142:27
Oldfield BP (1980) Accuracy of Orientation in Female Crickets, *Teleogryllus oceanicus* (Gryllidae): Dependence on Song Spectrum 141:93
Oldfield BP (1982) Tonotopic Organisation of Auditory Receptors in Tettigoniidae (Orthoptera: Ensifera) 147:461
Oldfield BP, see Hill KG
Olesen J, Miller LA (1979) Avoidance Behavior in Green Lacewings. II. Flight Muscle Activity 131:121
Olesen J, see Miller LA
Olivo RF, Larsen ME (1978) Brief Exposure to Light Initiates Screening Pigment Migration in Retinula Cells of the Crayfish, *Procambarus* 125:91
Olsen LE, see Feder ME
Oman CM, see Peterson SK, et al
Ooshiro Z, see Hayashi S
Orbach J, see Baudinette RV, et al
Orchard I, see Finlayson LH
O'Shea M, see Rowell CHF
O'Shea TJ, see Bullock TH, et al
Osse JWM, see Granzier HLM, et al
Ostwald J, see Jen PH-S, et al
Otter CJ Den (1977) Single Sensillum Responses in the Male Moth *Adoxophyes orana* (F.v.R.) to Female Sex Pheromone Components and Their Geometrical Isomers 121:205
Otto D, Weber T (1982) Interneurons Descending from the Cricket Cephalic Ganglia That Discharge in the Pattern of Two Motor Rhythms 148:209
Ottoson D, see Moser H, et al
Oxford GS (1977) Multiple Sources of Esterase Enzymes in the Crop Juice of *Cepaea* (Mollusca: Helicidae) 122:375
Oxford GS (1979) The Subcellular Localisation of Certain Crop-Juice Esterases in the Digestive Gland of *Cepaea* (Mollusca: Helicidae) 132:327
Ozeki M, Takahata M, Hisada M (1978) Afferent Response Patterns of the Crayfish Statocyst with Ferrite Grain Statolith to Magnetic Field Stimulation 123:1

P

Packard G, see Collins BG, et al
Page CH (1978) Load Compensation in the Crayfish Abdomen 123:349
Page CH, see Thompson CS
Page TL (1978) Interactions between Bilaterally Paired Components of the Cockroach Circadian System 124:225
Painter SD (1982) FMRFamide Catch Contractures of a Molluscan Smooth Muscle: Pharmacology, Ionic Dependence and Cyclic Nucleotides 148:491
Palumbi SR, Sidell BD, Beneden R Van, Smith GD, Powers DA (1980) Glucosephosphate Isomerase (GPI) of the Teleost *Fundulus heteroclitus* (Linnaeus): Isozymes, Allozymes and Their Physiological Roles 138:49
Pang PKT, see Strickland ML, et al
Panhuber H, see Laing DG
Papi F, Keeton WT, Brown AI, Benvenuti S (1978) Do American and Italian Pigeons Rely on Different Homing Mechanisms? 128:303
Papi F, Mariotti G, Foà A, Fiaschi V (1980) Orientation of Anosmatic Pigeons 135:227
Papi F, see Ioalé P, et al
Papi F, see Waldvogel JA, et al
Parker DS, see Jones CS
Parmer M, see Crawshaw LI, et al
Partridge BL (1981) Internal Dynamics and the Interrelations of Fish in Schools 144:313
Partridge BL, Heiligenberg W (1980) Three's a Crowd? Predicting *Eigenmannia*'s Responses to Multiple Jamming 136:153
Partridge BL, Heiligenberg W, Matsubara J (1981) The Neural Basis of a Sensory Filter in the Jamming Avoidance Response: No Grandmother Cells in Sight 145:153
Partridge BL, Pitcher TJ (1980) The Sensory Basis of Fish Schools: Relative Roles of Lateral Line and Vision 135:315
Partridge BL, see Heiligenberg W
Passano LM, see Kass-Simon G
Pasveer FJ, see Molen JN vd, et al
Patterson JA, Chappell RL (1980) Intracellular Responses of Procion Filled Cells and Whole Nerve Cobalt Impregnation in the Dragonfly Median Ocellus 139:25
Patterson JL, Kelly TJ, Duman JG (1981) Purification and Composition of a Thermal Hysteresis Producing Protein from the Milkweed Bug, *Oncopeltus fasciatus* 142:539
Paul DH, Roberts BL (1979) The Significance of Cerebellar Function for a Reflex Movement of the Dogfish 134:69
Paul RC, Walker TJ (1979) Arboreal Singing in a Burrowing Cricket, *Anurogryllus arboreus* 132:217
Pawson L, see Eatock RA, et al
Payan P (1978) A Study of the Na^+/NH_4^+ Exchange across the Gill of the Perfused Head of the Trout (*Salmo gairdneri*) 124:181
Payne R (1981) Suppression of Noise in a Photorecetor by Oxidative Metabolism 142:181
Pearson KG (1980) Burst Generation in Coordinating Interneurons of the Ventilatory System of the Locust 137:305
Pearson KG, Robertson RM (1981) Interneurons Coactivating Hindleg Flexor and Extensor Motoneurons in the Locust 144:391
Pearson KG, see Robertson RM
Pearson KG, see Steeves JD
Pedersen SB, see Skovmand O
Peele PH, see Bretschneider F, et al
Peleg L, Nesbitt MN, Ashkenazi IE (1982) A Strain Difference in the Daily Rhythm of Glyceraldehyde-3-Phosphate Dehydrogenase Activity in the Mouse 148:137
Pellegrino M, see Magni F
Pendergast DR, see Weinheimer CJ, et al
Pennetier JL, see Lhonoré J, et al
Pentreath VW, see Berry MS
Péqueux A, see Kévers C, et al
Perlman DL, see Goldsmith TH, et al
Perret M (1978) Variations in Oxygen Consumption of Demidoff's Bushbaby (*Galago demidovii*, Lorisidae, Primates) in Captivity 126:241
Perry SF, Duncker H-R (1980) Phase-Resetting a Mosquito Circadian Oscillator. I. Phase-Resetting Surface 138:201
Perry SF, Duncker H-R (1980) Interrelationship of Static Mechanical Factors and Anatomical Structure in Lung Evolution 138:321
Peters RC, see Bretschneider F, et al
Peterson SK, Frishkopf LS, Lechène C, Oman CM, Weiss TF (1978) Element Composition of Inner Ear Lymphs in Cats, Lizards, and Skates Determined by Electron Probe Microanalysis of Liquid Samples 126:1
Petrosyan AM, see Burovina IV, et al
Pettersson K, Nilsson S (1979) Nervous Control of the Branchial Vascular Resistance of the Atlantic Cod, *Gadus morhua* 129:179
Pettersson K, Nilsson S (1980) Drug Induced Changes in Cardio-Vascular Parameters in the Atlantic Cod, *Gadus morhua* 137:131
Pettersson K, see Nilsson B
Petty RL, see Boppré M, et al
Peyer JE de, Machemer H (1977) Membrane Excitability in *Stylonychia*: Properties of the Two-Peak Regenerative Ca-Response 121:15
Peyer JE de, Machemer H (1978) Hyperpolarizing and Depolarizing Mechanoreceptor Potentials in *Stylonychia* 127:255
Peyer JE de, Machemer H (1983) Threshold Activation and Dynamic Response Range of Cilia Following Low Rates of Membrane Polarization Under Voltage-Clamp 150:223
Peyraud C, see Peyraud-Waitzenegger M, et al
Peyraud C, see Thomas S, et al
Peyraud-Waitzenegger M (1979) Simultaneous Modifications of Ventilation and Arterial P_{O_2} by Catecholamines in the Eel, *Anguilla anguilla* L.: Participation of α and β Effects 129:343

Peyraud-Waitzenegger M, Barthelemy L, Peyraud C (1980) Cardiovascular and Ventilatory Effects of Catecholamines in Unrestrained Eels (*Anguilla anguilla* L.). A Study of Seasonal Changes in Reactivity 138:367
Pfau HK, Nachtigall W (1981) Der Vorderflügel großer Heuschrecken als Luftkrafterzeuger. II. Zusammenspiel von Muskeln und Gelenkmechanik bei der Einstellung der Flügelgeometrie 142:135
Pfeiffer W, Riegelbauer G (1978) The Effect of the Alarm Substance on the Central Nervous Excitation of the Black Tetra *Gymnocorymbus ternetzi* (Characidae, Ostariophysi, Pisces) Indicated by Dorsal Light Response 123:281
Pfeiler E (1978) Na-ATPase and NaK-ATPase Activities in Gills of Rainbow Trout (*Salmo gairdneri*) 124:97
Pfitzer G, Rüegg JC (1982) Molluscan Catch Muscle: Regulation and Mechanics in Living and Skinned Anterior Byssus Retractor Muscle of *Mytilus edulis* 147:137
Pflüger H-J, Tautz J (1982) Air Movement Sensitive Hairs and Interneurons in *Locusta migratoria* 145:369
Pflüger H-J, see Bässler U
Phillips JA, Harlow HJ (1982) Long-Term Effects of Pinealectomy on the Annual Cycle of Golden-Mantled Ground Squirrels, *Spermophilus lateralis* 146:501
Phillips JB (1977) Use of the Earth's Magnetic Field by Orienting Cave Salamanders (*Eurycea lucifuga*) 121:273
Pic P (1978) A Comparative Study of the Mechanism of Na^+ and Cl^- Excretion by the Gill of *Mugil capito* and *Fundulus heteroclitus*: Effects of Stress 123:155
Pic P, Lahitette P (1981) Effects of Cytochalasin B on Water, Na^+ and Cl^- Exchanges in the Gill of Seawater Adapted Mullet *Mugil capito* 141:523
Pic P, Maetz J (1981) Role of External Calcium in Sodium and Chloride Transport in the Gills of Seawater-Adapted *Mugil capito* 141:511
Pichka V, see Frantsevich L, et al
Pick B †, Buchner E (1979) Visual Movement Detection Under Light- and Dark-Adaptation in the Fly, *Musca domestica* 134:45
Pierce SK, see Amende LM
Pierce SK, see Beres LS
Pieters H, see Kluytmans JH, et al
Piiper J, see Tazawa H, et al
Pinder AW, see Booth CE, et al
Pineda E, see Graham JB, et al
Pinsker H, see Feinstein R, et al
Pinsker HM, see Cobbs JS
Pinto LH, Brown JE (1977) Intracellular Recordings from Photoreceptors of the Squid (*Loligo pealii*) 122:241
Pitcher TJ, see Partridge BL
Pivovarova NB, see Burovina IV, et al
Plas AJ van der, Voogt PA (1982) The Biochemical Composition of the Pyloric Caeca and Its Relation to DNA Levels in the Female Starfish *Asterias rubens* During the Reproductive Cycle 148:49
Plassmann W (1980) Central Neuronal Pathways in the Lateral Line System of *Xenopus laevis* 136:203
Plaxton WC, Storey KB (1982) Alanopine Dehydrogenase: Purification and Characterization of the Enzyme from *Littorina littorea* Foot Muscle 149:57
Plourde N, see Pollack GS
Ploye H (1979) Endothermy and Partial Thermoregulation in the Silkworm Moth, *Bombyx mori* 129:315
Plummer MR, Camhi JM (1981) Discrimination of Sensory Signals from Noise in the Escape System of the Cockroach: The Role of Wind Acceleration 142:347
Plummer MR, see Reichert H, et al
Pogorelov AG, see Burovina IV, et al
Polanovsky A, see Frantsevich L, et al
Pollack AJ, see Ritzmann RE
Pollack AJ, see Ritzmann RE, et al
Pollack GS (1977) Labellar Lobe Spreading in the Blowfly: Regulation by Taste and Satiety 121:115
Pollack GS (1982) Sexual Differences in Cricket Calling Song Recognition 146:217
Pollack GS, Hoy R (1981) Phonotaxis to Individual Rhythmic Components of a Complex Cricket Calling Song 144:367
Pollack GS, Plourde N (1982) Directionality of Acoustic Orientation in Flying Crickets 146:207
Pollak G, Henson OW Jr, Johnson R (1979) Multiple Specializations in the Peripheral Auditory System of the CF-FM Bat, *Pteronotus parnellii* 131:255
Pollak G, see Schuller G
Polyanovsky AD, see Burovina IV, et al
Pomeroy GC, see Bennett MF
Poole CA, Satchell GH (1979) Nociceptors in the Gills of the Dogfish *Squalus acanthias* 130:1
Poon MLT (1980) Induction of Swimming in Lamprey by L-DOPA and Amino Acids 136:337
Popov AV (1981) Sound Production and Hearing in the Cicada, *Cicadetta sinuatipennis* Osh. (Homoptera, Cicadidae) 142:271
Popov AV, Markovich AM (1982) Auditory Interneurones in the Prothoracic Ganglion of the Cricket, *Gryllus bimaculatus*. II. A High-Frequency Ascending Neurone (HF_1AN) 146:351
Popov AV, Markovich AM, Andjan AS (1978) Auditory Interneurons in the Prothoracic Ganglion of the Cricket, *Gryllus bimaculatus* deGeer. I. The Large Segmental Auditory Neuron (LSAN) 126:183
Popper AN, Tavolga WN (1981) Structure and Function of the Ear in the Marine Catfish, *Arius felis* 144:27
Popper AN, see Coombs S
Pörtner H-O, Surholt B, Grieshaber M (1979) Recovery from Anaerobiosis of the Lugworm, *Arenicola marina* L.: Changes of Metabolite Concentrations in the Body-Wall Musculature 133:227
Possidente B, Hegmann JP (1980) Circadian Complexes: Circadian Rhythms Under Common Gene Control 139:121
Potts WTW, Fryer G (1979) The Effects of pH and Salt Content on Sodium Balance in *Daphnia magna* and *Acantholeberis curvirostris* (Crustacea: Cladocera) 129:289
Potts WTW, see McWilliams PG
Potts WTW, see Robinson GD
Pough FH, see Taigen TL
Poupa O, see Gesser H
Powell SL, see Kimmel CB, et al
Powers DA, see Palumbi SR, et al
Praagh JP van, Ribi W, Wehrhan C, Wittmann D (1980) Drone Bees Fixate the Queen with the Dorsal Frontal Part of Their Compound Eyes 136:263
Prager J, Streng R (1982) The Resonance Properties of the Physical Gill of *Corixa punctata* and Their Significance in Sound Reception 148:323
Prange HD, see Jackson DC
Pratt H, see Dagan D, et al
Pratt R, see Jürgens U, et al
Preslar AJ III, Hutchison VH (1978) Energetics for Activity in the Salamander *Amphiuma tridactylum* 128:139
Prestwich KN, Walker TJ (1981) Energetics of Singing in Crickets: Effect of Temperature in Three Trilling Species (Orthoptera: Gryllidae) 143:199
Prince E, see Davis WJ, et al
Prosser CL, Mackie GO (1980) Contractions of Holothurian Muscles 136:103
Prosser CL, see Hazel JR
Prosser CL, see Nelson DO
Putnam R, see Hillman SS, et al
Putnam RW, Bennett AF (1982) Thermal Dependence of Isometric Contractile Properties of Lizard Muscle 147:11

Q

Quicke DLJ, see Brace RC
Quine DB, Kreithen ML (1981) Frequency Shift Discrimination: Can Homing Pigeons Locate Infrasounds by Doppler Shifts? 141:153
Quine DB, see Kreithen ML
Quinn TP (1982) Evidence for Celestial and Magnetic Compass Orientation in Lake Migrating Sockeye Salmon Fry 137:243
Quinn TP, Brannon EL (1982) The Use of Celestial and Magnetic Cues by Orienting Sokeye Salmon Smolts 147:547

R

Rachman NJ (1980) Physiology of Feeding Preference Patterns of Female Black Blowflies (*Phormia regina* Meigen). I. The Role of Carbohydrate Reserves 139:59
Rafael J, see Heldmaier G, et al
Ralph CL, see Kavaliers M

Randall DJ, see Farrell AP, et al
Randall W (1981) A Complex Seasonal Rhythm Controlled by Photoperiod 142:227
Rasmussen L, Hoffmann EK, Jørgensen CB (1978) Na^+-Independent Uptake of Nutrients in *Tetrahymena* 125:97
Rathmayer W, see Ballantyne D
Rausch LJ, see Macadar AW, et al
Rautenberg W, see Bech C, et al
Rautenberg W, see Nomoto S, et al
Rautenberg W, see Sieland M, et al
Razmjoo S, Hamdorf K (1980) In Support of the "Photopigment Model" of Vision in Invertebrates 135:209
Reap LE, see Bennett MF
Reddy GR, Kumar TP, Mohan PM, Babu KS (1978) Diurnal Variations in Physiological Activities in the Garden Snail, *Cryptozona ligulata* 125:59
Reddy SRR, see Baby TG
Reeves RB, see Lapennas GN
Regnault M (1979) Ammonia Excretion of the Sand-Shrimp *Crangon crangon* (L.) During the Moult Cycle 133:199
Regnault M (1981) Respiration and Ammonia Excretion of the Shrimp *Crangon crangon* L.: Metabolic Response to Prolonged Starvation 141:549
Rehbein H, see Kalmring K, et al
Reichert H, Bicker G (1979) A Visual Learning Study of Brightness Perception in Two Mutants of *Drosophila melanogaster* 133:283
Reichert H, Plummer MR, Hagiwara G, Roth RL, Wine JJ (1982) Local Interneurons in the Terminal Abdominal Ganglion of the Crayfish 149:145
Reichert H, Wine JJ, Hagiwara G (1981) Crayfish Escape Behavior: Neurobehavioral Analysis of Phasic Extension Reveals Dual Systems for Motor Control 142:281
Reichert H, see Bicker G
Reichert H, see Hu KG, et al
Reif H, see Honegger H-W, et al
Reilly K, see Binkley S, et al
Reilly KB, see Binkley S, et al
Reiner B, see Necker R
Reißland A (1978) Electrophysiology of Trichobothria in Orb-weaving Spiders (Agelenidae, Araneae) 123:71
Reißland A, Görner P (1978) Mechanics of Trichobothria in Orb-weaving Spiders (Agelenidae, Araneae) 123:59
Renaud JM, Moon TW (1980) Characterization of Gluconeogenesis in Hepatocytes Isolated from the American Eel, *Anguilla rostrata* LeSueur 135:115
Renaud JM, Moon TW (1980) Starvation and the Metabolism of Hepatocytes Isolated from the American Eel, *Anguilla rostrata* LeSueur 135:127
Renaud JM, Stevens ED (1981) The Interactive Effects of Temperature and pH on the Isometric Contraction of Toad Sartorius Muscle 145:67
Rensing L, Taylor W, Dunlap J, Hastings JW (1980) The Effects of Protein Synthesis Inhibitors on the *Gonyaulax* Clock. II. The Effect of Cycloheximide on Ultrastructural Parameters 138:9
Rensing L, see Weitzel G
Renwrantz L, Schäncke W, Harm H, Erl H, Liebsch H, Gercken J (1981) Discriminative Ability and Function of the Immunobiological Recognition System of the Snail *Helix pomatia* 141:477
Renwrantz L, Stahmer A (1983) Opsonizing Properties of an Isolated Hemolymph Agglutinin and Demonstration of Lectin-Like Recognition Molecules at the Surface of Hemocytes from *Mytilus edulis* 149:535
Rheinlaender J, Gerhardt HC, Yager DD, Capranica RR (1979) Accuracy of Phonotaxis by the Green Treefrog (*Hyla cinerea*) 133:247
Rheinlaender J, Römer H (1980) Bilateral Coding of Sound Direction in the CNS of the Bushcricket *Tettigonia viridissima* L. (Orthoptera, Tettignoiidae) 140:101
Rheinlaender J, see Römer H, et al
Ribi W, see Hardie RC, et al
Ribi W, see Praagh JP van, et al
Ribi WA (1979) Coloured Screening Pigments Cause Red Eye Glow Hue in Pierid Butterflies 132:1
Ribi WA (1979) Do the Rhabdomeric Structures in Bees and Flies Really Twist? 134:109
Ribi WA (1980) New Aspects of Polarized Light Detection in the Bee in View of Non-Twisting Rhabdomeric Structures 137:281
Rice GE, Bradshaw SD (1980) Changes in Dermal Reflectance and Vascularity and Their Effects on Thermoregulation in *Amphibolurus nuchalis* (Reptilia: Agamidae) 135:139
Rice GE, Skadhauge E (1982) The in vivo Dissociation of Colonic and Coprodeal Transepithelial Transport in NaCl Depleted Domestic Fowl 146:51
Rice GE, Skadhauge E (1982) Caecal Water and Electrolyte Absorption and the Effects of Acetate and Glucose, in Dehydrated, Low-NaCl Diet Hens 147:61
Rice GE, Skadhauge E (1982) Colonic and Coprodeal Transepithelial Transport Parameters in NaCl-Loaded Domestic Fowl 147:65
Richardson SD, see Shetty AS, et al
Riddiford LM, see Hori M
Riedesel ML, see Glass ML, et al
Riedesel ML, see Hicks JW
Riegelbauer G, see Pfeiffer W
Riehle A (1981) Color Opponent Neurons of the Honeybee in a Heterochromatic Flicker Test 142:81
Riemslag FCC, Schellart NAM (1978) Evoked Potentiais and Spike Responses to Moving Stimuli in the Optic Tectum of Goldfish 128:13
Riess I, see Campenhausen C von, et al
Rigden MR, see Simmons JA, et al
Rigler M, see Davis WJ, et al
Rintamäki H, see Hohtola E, et al
Ritzmann RE (1981) Motor Responses to Paired Stimulation of Giant Interneurons in the Cockroach *Periplaneta americana*. II. The Ventral Giant Interneurons 143:71
Ritzmann RE, Camhi JM (1978) Excitation of Leg Motor Neurons by Giant Interneurons in the Cockroach *Periplaneta americana* 125:305
Ritzmann RE, Pollack AJ (1981) Motor Responses to Paired Stimulation of Giant Interneurons in the Cockroach *Periplaneta americana*. I. The Dorsal Giant Interneurons 143:61
Ritzmann RE, Pollack AJ, Tobias ML (1982) Flight Activity Mediated by Intracellular Stimulation of Dorsal Giant Interneurons of the Cockroach *Periplaneta americana* 147:313
Rivera ME, Langer H (1978) Effect of Light on ATPases in Eyes and Brain of the Blowfly, *Calliphora* 123:245
Roach SC, see Stiffler DF, et al
Roberts A (1980) The Function and Role of Two Types of Mechanoreceptive 'Free' Nerve Endings in the Head Skin of Amphibian Embryos 135:341
Roberts A, see Foster RG
Roberts BL, see Paul DH
Roberts MH, see Block GD
Roberts SK (1982) Circadian Periodicity in Cockroaches Altered by High Frequency Light-Dark Cycles 146:255
Robertson GA, see Stein PSG, et al
Robertson RM, Moulins M (1981) Oscillatory Command Input to the Motor Pattern Generators of the Crustacean Stomatogastric Ganglion. I. The Pyloric Rhythm 143:453
Robertson RM, Pearson KG (1982) A Preparation for the Intracellular Analysis of Neuronal Activity During Flight in the Locust 146:311
Robertson RM, see Pearson KG
Robinson GD, Potts WTW (1979) Ion Fluxes and Diffusion Potentials in the Dungeness Crab, *Cancer magister* 131:285
Robinson NL (1981) Glutamate as the Transmitter at Fast and Slow Neuromuscular Junctions of Larval Diptera 144:139
Robinson NL (1982) Anomalous Resistance Changes Following Application of the Neurotransmitter L-Glutamate in Insect Muscle 148:281
Rollema HS, see Bauer C, et al
Römer H, Rheinlaender J, Dronse R (1981) Intracellular Studies on Auditory Processing in the Metathoracic Ganglion of the Locust 144:305
Römer H, see Rheinlaender J
Rose R, Menzel R (1981) Luminance Dependence of Pigment Color Discrimination in Bees 141:379
Rosner G (1978) The Influence of Thermal Stimulation of the Spinal Cord and Skin on the Activity of Hypothalamic Units 126:151
Rosolowsky M, see Merrill GF, et al

Rosowski JJ, Saunders JC (1980) Sound Transmission Through the Avian Interaural Pathways 136:183
Ross TF, see Kutchai H, et al
Rossel S (1979) Regional Differences in Photoreceptor Performance in the Eye of the Praying Mantis 131:95
Rossel S (1980) Foveal Fixation and Tracking in the Praying Mantis 139:307
Rossel S, Wehner R, Lindauer M (1978) *E*-Vector Orientation in Bees 125:1
Rossi-Durand C, Vedel JP (1982) Antennal Proprioception in the Rock Lobster *Palinurus vulgaris*: Anatomy and Physiology of a Bi-Articular Chordotonal Organ 145:505
Roth A (1978) Further Indications of a Chemical Synapse in the Electroreceptors of the Catfish 126:147
Roth A (1982) Sensitivity of Catfish Electroreceptors: Dependence on Freshwater Ions and Skin Potential 147:329
Roth G (1978) The Role of Stimulus Movement Patterns in the Prey Catching Behavior of *Hydromantes genei* (Amphibia, Plethodontidae) 123:261
Roth G, see Himstedt W
Roth RL, see Reichert H, et al
Roth W, see Nachtigall W
Rowell CHF, O'Shea M (1980) Modulation of Transmission at an Electrical Synapse in the Locust Movement Detector System 137:233
Rozhkova GI (1980) Comparison of the Constancy Mechanisms in the Cercal Systems of Crickets (*Acheta domesticus* and *Gryllus bimaculatus*) 137:287
Rubin LJ, see Mote MI
Rübsamen K, Heller R, Lawrenz H, Engelhardt W v (1979) Water and Energy Metabolism in the Rock Hyrax (*Procavia habessinica*) 131:303
Rübsamen K, Kettembeil S (1980) Effect of Water Restriction on Oxygen Uptake, Evaporative Water Loss and Body Temperature of the Rock Hyrax 138:315
Rübsamen K, see Hume ID, et al
Rübsamen R, Schuller G (1981) Laryngeal Nerve Activity During Pulse Emission in the CF-FM Bat, *Rhinolophus ferrumequinum*. II. The Recurrent Laryngeal Nerve 143:323
Rübsamen R, see Schuller G
Rudnicka M, see Jones D, et al
Rudy JW, see Sahley C, et al
Rüegg JC, see Pfitzer G
Rusak B, see Boulos Z
Rusak B, see Fitzgerald K, et al
Ruz H Le, see Thomas S
Ryan MJ (1983) Frequency Modulated Calls and Species Recognition in a Neotropical Frog 150:217
Ryan MJ, Tuttle MD, Barclay RMR (1983) Behavioral Responses of the Frog-Eating Bat, *Trachops cirrhosus*, to Sonic Frequencies 150:413
Rydqvist B, see Moser H, et al

S

Saad KHM, see Huddart H
Sachs MB, Sinnott JM (1978) Responses to Tones of Single Cells in Nucleus Magnocellularis and Nucleus Angularis of the Redwing Blackbird (*Agelaius phoeniceus*) 126:347
Sahley C, Rudy JW, Gelperin A (1981) An Analysis of Associative Learning in a Terrestrial Mollusc. I. Higher-Order Conditioning, Blocking and a Transient US-Pre-Exposure Effect 144:1
Saint Paul U von, Aschoff J (1978) Longevity Among Blowflies *Phormia terraenovae* R.D. Kept in Non-24-Hour Light-Dark Cycles 127:191
Sakaguchi DS, Murphey RK (1983) The Equilibrium Detecting System of the Cricket: Physiology and Morphology of an Identified Interneuron 150:141
Saleuddin ASM, see Andrew RD
Saleuddin ASM, see Waite JH, et al
Salimans M, see Ebberink RHM
Samanen DW, Bernard RA (1981) Response Properties of the Glossopharyngeal Taste System of the Mud Puppy (*Necturus maculosus*). I. General Organization and Whole Nerve Responses 143:143
Samanen DW, Bernard RA (1981) Response Properties of the Glossopharyngeal Taste System of the Mud Puppy (*Necturus maculosus*). II. Responses of Individual First-Order Neurons 143:151
Sand O, Michelsen A (1978) Vibration Measurements of the Perch Saccular Otolith 123:85
Sand O, see Hawkins AD
Sandeman DC (1978) Regionalization in the Eye of the Crab *Leptograpsus variegatus*: Eye Movements Evoked by a Target Moving in Different Parts of the Visual Field 123:299
Sandeman DC (1978) Eye-Scanning during Walking in the Crab *Leptograpsus variegatus* 124:249
Sandeman DC (1980) Angular Acceleration, Compensatory Head Movements and the Halteres of Flies (*Lucilia serricata*) 136:361
Sandeman DC, see Ache BW
Sandeman DC, see Janse C
Sandoval I, see Bernstein MH, et al
Sanes DH, see Wyse GA, et al
Sarne Y, see Dagan D
Sarne Y, see Dagan D, et al
Sass H (1978) Olfactory Receptors on the Antenna of *Periplaneta*: Response Constellations That Encode Food Odors 128:227
Satchell GH, see Poole CA
Satterlie RA (1979) Central Control of Swimming in the Cubomedusan Jellyfish *Carybdea rastonii* 133:357
Satterlie RA, Spencer AN (1983) Neuronal Control of Locomotion in Hydrozoan Medusae. A Comparative Study 150:195
Satterlie RA, see Spencer AN
Saunders, DS (1978) An Experimental and Theoretical Analysis of Photoperiodic Induction in the Flesh-Fly, *Sarcophaga argyrostoma* 124:75
Saunders DS (1978) Internal and External Coincidence and the Apparent Diversity of Photoperiodic Clocks in the Insects 127:197
Saunders DS (1979) External Coincidence and the Photoinducible Phase in the *Sarcophaga* Photoperiodic Clock 132:179
Saunders DS (1982) The Effects of Ultra-Short Photoperiods on the Seasonal Clock in *Sarcophaga argyrostoma* 145:421
Saunders JC, Denny RM, Bock GR (1978) Critical Bands in the Parakeet (*Melopsittacus undulatus*) 125:359
Saunders JC, Summers RM (1982) Auditory Structure and Function in the Mouse Middle Ear: An Evaluation by SEM and Capacitive Probe 146:517
Saunders JC, see Rosowski JJ
Scapini F, Neil DM, Schöne H (1978) Leg-to-Body Geometry Determines Eyestalk Reactions to Substrate Tilt. Substrate Orientation in Spiny Lobsters IV 126:287
Scapini F, see Neil DM, et al
Scapini F, see Schöne H, et al
Schäncke W, see Renwrantz L, et al
Scharstein H, see Schmitz B, et al
Schartau W (1978) The Tryptophan 2,3-Dioxygenase of the Blowfly *Protophormia terrae-novae*: Inhibition by Carbon Monoxide, and Interaction between Oxygen and Tryptophan Binding Sites 124:117
Schartau W, see Markl J, et al
Schartau W, see Stratakis E
Scheich H, Langner G, Bonke D (1979) Responsiveness of Units in the Auditory Neostriatum of the Guinea Fowl (*Numida meleagris*) to Species-Specific Calls and Synthetic Stimuli. II. Discrimination of Iambus-Like Calls 132:257
Scheich H, see Bonke D, et al
Scheich H, see Langner G
Schellart NAM, see Riemslag FCC
Scherer C, see Kolb G
Scheuch GC, Johnson W, Conner RL, Silver J (1982) Investigation of Circadian Rhythms in a Genetically Anophthalmic Mouse Strain: Correlation of Activity Patterns with Suprachiasmatic Nuclei Hypogenesis 149:333
Schilcher F von, Hall JC (1979) Neural Topography of Courtship Song in Sex Mosaics of *Drosophila melanogaster* 129:85
Schildberger K, see Erber J
Schiolten P, Larsen ON, Michelsen A (1981) Mechanical Time Resolution in Some Insect Ears. I. Impulse Responses and Time Constants 143:289
Schlecht P (1979) Colour Discrimination in Dim Light: An Analysis of the Photoreceptor Arrangement in the Moth *Deilephila* 129:257
Schlecht P, Hamdorf K, Langer H (1978) The Arrangement of Colour Receptors in a

Fused Rhabdom of an Insect. A Microspectrophotometric Study on the Moth *Deilephila* 123:239
Schlecht P, see Hamdorf G, et al
Schlegel P, see Vater M
Schlegel P, see Vater M, et al
Schlegel PA, see Jen PH-S
Schliwa M, Fleissner G (1979) Arhabdomeric Cells of the Median Eye Retina of Scorpions. I. Fine Structural Analysis 130:265
Schmajuk NA, see Segura ET, et al
Schmale M, see Feinstein R, et al
Schmid E, see Keller R
Schmidt I (1978) Behavioral and Autonomic Thermoregulation in Heat Stressed Pigeons Modified by Central Thermal Stimulation 127:75
Schmidt I (1982) Thermal Stimulation of Exposed Skin Area Influences Behavioral Thermoregulation in Pigeons 146:201
Schmidt I, Simon E (1979) Interaction of Behavioral and Autonomic Thermoregulation in Cold Exposed Pigeons 133:151
Schmidt RS (1978) Neural Correlates of Frog Calling: Circummetamorphic "Calling" in Leopard Frog 126:49
Schmidt SP, House EW (1982) Plasma Cortisol Measurements in Precocious Male and Nonprecocious Male Juvenile Steelhead Trout (*Salmo gairdneri*) 146:123
Schmidt U, see Kürten L
Schmitz B, Scharstein H, Wendler G (1982) Phonotaxis in *Gryllus campestris* L. (Orthoptera, Gryllidae). I. Mechanism of Acoustic Orientation in Intact Female Crickets 148:431
Schneider D, see Boppré M, et al
Schneider H, see Hubl L
Schneider H, see Mohneke R
Schnitzler H-U, see Gustafson Y
Schoenmakers HJN (1980) The Variation of 3β-Hydroxysteroid Dehydrogenase Activity of the Ovaries and Pyloric Caeca of the Starfish *Asterias rubens* During the Annual Reproductive Cycle 138:27
Schöne H, Neil DM, Scapini F (1978) The Influence of Substrate Contact on Gravity Orientation. Substrate Orientation in Spiny Lobsters V 126:293
Schöne H, Neil DM, Scapini F, Dreissmann G (1983) Interaction of Substrate, Gravity and Visual Cues in the Control of Compensatory Eye Responses in the Spiny Lobster, *Palinurus vulgaris* 150:23
Schöne H, see Neil DM, et al
Schöne H, see Scapini F, et al
Schönitz G, see Ewert J-P, et al
Schors RC van der, see With ND de
Schöttler U (1978) Investigations of the Anaerobic Metabolism of the Polychaete Worm *Nereis diversicolor* M. 125:185
Schöttler U, Wienhausen G, Zebe E (1983) The Mode of Energy Production in the Lugworm *Arenicola marina* at Different Oxygen Concentrations 149:547
Schroff G, Zebe E (1980) The Anaerobic Formation of Propionic Acid in the Mitochondria of the Lugworm *Arenicola marina* 138:35
Schuijf A, see Buwalda RJA, et al
Schuller G (1979) Vocalization Influences Auditory Processing in Collicular Neurons of the CF-FM-Bat, *Rhinolophus ferrumequinum* 132:39
Schuller G (1980) Hearing Characteristics and Doppler Shift Compensation in South Indian CF-FM Bats 139:349
Schuller G, Pollak G (1979) Disproportionate Frequency Representation in the Inferior Colliculus of Doppler-Compensating Greater Horseshoe Bats: Evidence for an Acoustic Fovea 132:47
Schuller G, Rübsamen R (1981) Laryngeal Nerve Activity During Pulse Emission in the CF-FM Bat, *Rhinolophus ferrumequinum*. I. Superior Laryngeal Nerve (External Motor Branch) 143:317
Schuller G, see Rübsamen R
Schultz R, see Wiese K
Schürg-Pfeiffer E, Ewert J-P (1981) Investigation of Neurons Involved in the Analysis of Gestalt Prey Features in the Frog *Rana temporaria* 141:139
Schwartz E, see Bleckmann H
Schwartz E, see Bleckmann H, et al
Schwartz E, see Müller U
Schwartzkopff J, see Oeckinghaus H
Schwind R (1978) Visual System of *Notonecta glauca*: A Neuron Sensitive to Movement in the Binocular Visual Field 123:315
Schwind R (1980) Geometrical Optics of the *Notonecta* Eye: Adaptations to Optical Environment and Way of Life 140:59
Schwind R (1983) A Polarization-Sensitive Response of the Flying Water Bug *Notonecta glauca* to UV Light 150:87
Searcy MH, see Dooling RJ
Sébert P, see Bouverot P, et al
Segura ET, Bandsholm UC, Bronstein A (1982) Role of the CNS in the Control of the Water Economy of the Toad *Bufo arenarum* Hensel. II. Adrenergic Control of Water Uptake Across the Skin 146:101
Segura ET, Bandsholm UC, Bronstein A, Woscoboinik D (1982) Role of the CNS in the Control of the Water Economy of the Toad *Bufo arenarum* Hensel. I. Effects of Handling, Brain Lesions, Anesthesia and Reversible Coma upon Water Uptake, Urine Production and Overall Water Balance 146:95
Segura ET, Bronstein A, Schmajuk NA (1981) Effect of Breathing upon Blood Pressure and Heart Rate in the Toad, *Bufo arenarum* Hensel 143:223
Seidl R, Kaiser W (1981) Visual Field Size, Binocular Domain and the Ommatidial Array of the Compound Eyes in Worker Honey Bees 143:17
Seidl R, see Kaiser W, et al
Seller TJ (1979) Unilateral Nervous Control of the Syrinx in Java Sparrows (*Padda oryzivora*) 129:281
Sellner PA, see Hazel JR, et al
Selverston A, see Gola M
Selverston AI, see Ayers JL Jr
Selzer R (1979) Morphological and Physiological Identification of Food Odour Specific Neurones in the Deutocerebrum of *Periplaneta americana* 134:159
Selzer R (1981) The Processing of a Complex Food Odor by Antennal Olfactory Receptors of *Periplaneta americana* 144:509
Senseman DM (1978) Short-Term Control of Food Intake by the Terrestrial Slug *Ariolimax* 124:37
Seuß J, see Mustafa T, et al
Seydlitz-Kurzbach U v, see Meyer DL, et al
Seyfarth E-A (1978) Lyriform Slit Sense Organs and Muscle Reflexes in the Spider Leg 125:45
Seyfarth E-A, Bohnenberger J, Thorson J (1982) Electrical and Mechanical Stimulation of a Spider Slit Sensillum: Outward Current Excites 147:423
Seymour C, Lewis B, Larsen ON, Michelsen A (1978) Biophysics of the Ensiferan Ear. II. The Steady-State Gain of the Hearing Trumpet in Bushcrickets 123:205
Seymour RS, Dobson GP, Baldwin J (1981) Respiratory and Cardiovascular Physiology of the Aquatic Snake, *Acrochordus arafurae* 144:215
Seymour RS, Spragg RG, Hartman MT (1981) Distribution of Ventilation and Perfusion in the Sea Snake, *Pelamis platurus* 145:109
Seymour RS, see Baudinette RV, et al
Sherman J, see Simmons JA, et al
Sherwood DN, see Brown SK
Shetty AS, Richardson SD, Cumming RB, Gaertner FH (1978) Influence of Strain and Stage of Development on Three Enzymes in the Tryptophan to Nicotinamide-Adenine Dinucleotide Pathway of Mice 124:189
Shevchenko V, see Frantsevich L, et al
Shikata M, see Furusawa T, et al
Shimada I, see Tanimura T
Shimada I, see Tanimura T, et al
Shimada S, Yamashita O (1979) Trehalose Absorption Related with Trehalase in Developing Ovaries of the Silkworm, *Bombyx mori* 131:333
Shoemaker VH, Bickler PE (1979) Kidney and Bladder Function in a Uricotelic Treefrog (*Phyllomedusa sauvagei*) 133:211
Shoemaker VH, see Hillman SS, et al
Shoemaker VH, see Yokota SD
Shogen K, see Hoshimiya N, et al
Short S, Taylor EW, Butler PJ (1979) The Effectiveness of Oxygen Transfer During Normoxia and Hypoxia in the Dogfish (*Scyliorhinus canicula* L.) Before and After Cardiac Vagotomy 132:289
Shuttleworth TJ (1978) The Effect of Adrenaline on Potentials in the Isolated Gills of the Flounder (*Platichthys flesus* L.) 124:129
Shuttleworth TJ, Thompson JL (1980) Oxygen Consumption in the Rectal Gland of the Dogfish *Scyliorhinus canicula* and the Effects of Cyclic AMP 136:39

Shuttleworth TJ, Thompson JL (1980) The Mechanism of Cyclic AMP Stimulation of Secretion in the Dogfish Rectal Gland 140:209
Shuttleworth TJ, see Stagg RM
Sibaoka T, see Nawata T
Sidell BD, see Palumbi SR, et al
Siebenaller JF, Somero GN (1979) Pressure-Adaptive Differences in the Binding and Catalytic Properties of Muscle-Type (M_4) Lactate Dehydrogenases of Shallow- and Deep-Living Marine Fishes 129:295
Sieland M, Delius JD, Rautenberg W, May B (1981) Thermoregulation Mediated by Conditioned Heart-Rate Changes in Pigeons 144:375
Sigvardt KA, Hagiwara G, Wine JJ (1982) Mechanosensory Integration in the Crayfish Abdominal Nervous System: Structural and Physiological Differences Between Interneurons with Single and Multiple Spike Initiating Sites 148:143
Sillman AJ, Bolnick DA, Haynes LW, Walter AE, Loew ER (1981) Microspectrophotometry of the Photoreceptors of Palaeognathous Birds – The Emu and the Tinamou 144:271
Silver J, see Scheuch GC, et al
Silver SC, Halls JAT (1980) Recording the Sounds of Hydropsychid Larvae – A Cautionary Tale 140:159
Silver WL (1982) Electrophysiological Responses from the Peripheral Olfactory System of the American Eel, *Anguilla rostrata* 148:379
Silvey GE, see Sleinis S
Simmers AJ, Bush BMH (1983) Central Nervous Mechanisms Controlling Rhythmic Burst Generation in the Ventilatory Motoneurones of *Carcinus maenas* 150:1
Simmons JA, Lavender WA, Lavender BA, Childs JE, Hulebak K, Rigden MR, Sherman J, Woolman B, O'Farrell MJ (1978) Echolocation by Free-tailed Bats (*Tadarida*) 125:291
Simmons JA, O'Farrell MJ (1977) Echolocation by the Long-eared Bat, *Plecotus phyllotis* 122:201
Simmons JA, Stein RA (1980) Acoustic Imaging in Bat Sonor: Echolocation Signals and the Evolution of Echolocation 135:61
Simmons PJ (1981) Synaptic Transmission Between Second- and Third-Order Neurones of a Locust Ocellus 145:265
Simmons PJ (1982) Transmission Mediated With and Without Spikes at Connexions Between Large Second-Order Neurones of Locust Ocelli 147:401
Simmons PJ (1982) The Operation of Connexions Between Photoreceptors and Large Second-Order Neurones in Dragonfly Ocelli 149:389
Simon E, see Deutsch H, et al
Simon E, see Hammel HT, et al
Simon E, see Kaul R, et al
Simon E, see Schmidt I
Simon E, see Simon-Oppermann C
Simon-Oppermann C, Simon E (1982) Osmotic and Volume Control of Diuresis in Conscious Ducks (*Anas platyrhynchos*) 146:17
Simon-Oppermann C, see Deutsch H, et al
Simon-Oppermann C, see Hammel HT, et al
Simpson SM, Follett BK (1981) Pineal and Hypothalamic Pacemakers: Their Role in Regulating Circadian Rhythmicity in Japanese Quail 144:381
Simpson SM, Follet BK (1982) Formal Properties of the Circadian System Underlying Photoperiodic Time-Measurement in Japanese Quail 145:381
Simpson SM, Follet BK (1982) Formal Properties of the Circadian Rhythm of Locomotor Activity in Japanese Quail 145:391
Sinclair F, see McMahon B, et al
Sinnett EE, see Kooyman GL, et al
Sinnott JM, see Sachs MB
Sismondo E (1979) Stridulation and Tegminal Resonance in the Tree Cricket *Oecanthus nigricornis* (Orthoptera: Gryllidae: Oecanthinae) 129:269
Sivak JG (1982) Optical Characteristics of the Eye of the Flounder 146:345
Sivak JG (1982) Optical Properties of a Cephalopod Eye (The Short Finned Squid, *Illex illecebrosus*) 147:323
Sivak JG, Bobier WR, Levy B (1978) The Refractive Significance of the Nictitating Membrane of the Bird Eye 125:335
Sivak JG, Warburg MR (1983) Changes in Optical Properties of the Eye During Metamorphosis of an Anuran, *Pelobates syriacus* 150:329
Sivak JG, see Levy B
Skadhauge E, Clemens E, Maloiy GMO (1980) The Effects of Dehydration on Electrolyte Concentrations and Water Content Along the Large Intestine of a Small Ruminant: The Dik-Dik Antelope 135:165
Skadhauge E, see Rice GE
Skjoldal HR, see Zwaan A de
Skovmand O, Pedersen SB (1978) Tooth Impact Rate in the Song of a Shorthorned Grasshopper: A Parameter Carying Specific Behavioral Information 124:27
Sleinis S, Silvey GE (1980) Locomotion in a Forward Walking Crab 136:301
Slopsema S, see Daan S
Smith GD, see Palumbi SR, et al
Smith JTF, see Larimer JL
Smith PH, Mittenthal JE (1980) Intersegmental Variation of Afferent Pathways to Giant Interneurons of the Earthworm, *Lumbricus terrestris* L. 140:351
Smock T, see Arch S, et al
Smola U, Meffert P (1979) The Spectral Sensitivity of the Visual Cells R7 and R8 in the Eye of the Blowfly *Calliphora erythrocephala* 133:41
Smola U, Tscharntke H (1979) Twisted Rhabdomeres in the Dipteran Eye 133:291
Smola U, Wunderer H (1981) Fly Rhabdomeres Twist in vivo 142:43
Snow PJ (1981) The Responses of the Antennular Muscles of the Brachyuran *Scylla serrata* (Forskål) (Portunoidea, Brachyura) to Repetitive Activation of Specific Motoneurons 142:189
Soivio A, Nikinmaa M, Westman K (1980) The Blood Oxygen Binding Properties of Hypoxic *Salmo gairdneri* 136:83
Soivio A, Tuurala H (1981) Structural and Circulatory Responses to Hypoxia in the Secondary Lamellae of *Salmo gairdneri* Gills at Two Temperatures 145:37
Soivio A, see Nikinmaa M, et al
Sokolove PG, McCrone EJ (1978) Reproductive Maturation in the Slug, *Limax maximus*, and the Effects of Artificial Photoperiod 125:317
Sokolove PG, see McCrone EJ
Sokolove PG, see McCrone EJ, et al
Sollock RL, Vorhaben JE, Campbell JW (1979) Transaminase Reactions and Glutamate Dehydrogenase in Gastropod Hepatopancreas 129:129
Solon MH, Koopowitz H (1982) Multimodal Interneurones in the Polyclad Flatworm, *Alloeplana californica* 147:171
Somero GN, see Castellini MA
Somero GN, see Greaney GS
Somero GN, see Siebenaller JF
Somero GN, see Yancey PH
Spatz H-C, see Hernández de Salomon C
Speck J, Barth FG (1982) Vibration Sensitivity of Pretarsal Slit Sensilla in the Spider Leg 148:187
Spencer AN, Satterlie RA (1981) The Action Potential and Contraction in Subumbrellar Swimming Muscle of *Polyorchis penicillatus* (Hydromedusae) 144:401
Spencer AN (1982) The Physiology of a Coelenterate Neuromuscular Synapse 148:353
Spencer AN, see Satterlie RA
Spindler K-D, see Kuppert P, et al
Spires JY, see Myrberg AA Jr
Spotila JR, see Weinheimer CJ, et al
Spragg RG, see Seymour RS, et al
Srinivasan MV, Dvorak DR (1980) Spatial Processing of Visual Information in the Movement-Detecting Pathway of the Fly. Characteristics and Functional Significance 140:1
Srinivasan MV, see Wehner R
Sroczyński S (1977) Spherical Aberration of Crystalline Lens in the Roach, *Rutilus rutilus* L. 121:135
Stadelmann A, see Evêquoz V, et al
Stagg RM, Shuttleworth TJ (1982) Na^+, K^+ ATpase, Ouabain Binding and Ouabain-Sensitive Oxygen Consumption in Gills from *Platichthys flesus* Adapted to Seawater and Freshwater 147:93
Stagg RM, Shuttleworth TJ (1982) The Effects of Copper on Ionic Regulation by the Gills of the Seawater-Adapted Flounder (*Platichthys flesus* L.) 149:83
Stahel CD, Nicol SC (1982) Temperature Regulation in the Little Penguin, *Eudyptula minor*, in Air and Water 148:93

Stahmer A, see Renwrantz L
Standora EA, see Weinheimer CJ, et al
Stange G (1981) The Ocellar Component of Flight Equilibrium Control in Dragonflies 141:335
Stark WS, Ivanyshyn AM, Greenberg RM (1977) Sensitivity and Photopigments of R1–6, a Two-peaked Photoreceptor, in *Drosophila*, *Calliphora* and *Musca* 121:289
Stark WS, Johnson MA (1980) Microspectrophotometry of *Drosophila* Visual Pigments: Determinations of Conversion Efficiency in R1–6 Receptors 140:275
Stark WS, see Hu KG
Stark WS, see Hu KG, et al
Starling JA, Fisher FM (1978) Carbohydrate Transport in *Moniliformis dubius* (Acanthocephala). II. Post-Absorptive Phosphorylation of Glucose and the Rôle of Trehalose in Accumulation of Endogenous Glucose Reserves 126:223
Stavenga DG, Bernard GD, Chappell RL, Wilson M (1979) Insect Pupil Mechanisms. III. On the Pigment Migration in Dragonfly Ocelli 129:199
Stavenga DG, see Bernard GD
Stavenga DG, see Leggett LMW
Stavenga DG, see Vogt K, et al
Steel CGH, see Ampleford EJ
Steele JE, Tolman JH (1980) Regulation of Water Transport in the Cockroach Rectum by the Corpora Cardiaca-Corpora Allata System: The Requirement for Na^+ 138:357
Steele JE, see Tolman JH
Steeves JD, Pearson KG (1982) Proprioceptive Gating of Inhibitory Pathways to Hindleg Flexor Motoneurons in the Locust 146:507
Stefensen JF, see Bushnell PG, et al
Stein PSG (1978) Swimming Movements Elicited by Electrical Stimulation of the Turtle Spinal Cord: The High Spinal Preparation 124:203
Stein PSG, Grossman ML (1980) Central Program for Scratch Reflex in Turtle 140:287
Stein PSG, Robertson GA, Keifer J, Grossman ML, Berenbeim JA, Lennard PR (1982) Motor Neuron Synaptic Potentials During Fictive Scratch Reflex in Turtle 146:401
Stein PSG, Robertson GA, Keifer J, Grossman ML, Berenbeim JA, Lennard PR (1982) Erratum 148:410
Stein RA, see Simmons JA
Steinlechner S, see Heldmaier G
Steinlechner S, see Heldmaier G, et al
Stene-Larsen G, Helle KB (1979) Temperature Effects on the Inotropic and Chronotropic Responses to Adrenaline in the Frog Heart 132:313
Stene-Larsen G, see Ask JA, et al
Stephan FK (1981) Limits of Entrainment to Periodic Feeding in Rats with Suprachiasmatic Lesions 143:401
Stephens PJ, Atwood HL (1981) Peripheral Generation and Modulation of Crustacean Motor Axon Activity at High Temperatures 142:309
Stephens PJ, Mellon DeF Jr (1979) Modification of Structure and Synaptic Physiology in Transformed Shrimp Muscle 132:97
Stephens PJ, Mellon DeF Jr (1979) Morphology and Synaptic Physiology of the Main Closer Muscle in Regenerating Claws of *Alpheus* 134:17
Stephens PJ, see Mellon DeF Jr
Stevens ED, see Renaud JM
Stewart DM, Martin AW (1982) Moulting in the Tarantula, *Dugesiella hentzi* 149:121
Stewart JM, see Driedzic WR
Štichová J, see Melichna J, et al
Stieve H, see Maaz G, et al
Stiffler DF, Atkins BJ, Burt LD, Roach SC (1982) Control of Renal Function in Larval *Ambystoma tigrinum* 149:91
Stone LS, see DeVoe RD, et al
Storey JM, Storey KB (1983) Regulation of Cryoprotectant Metabolism in the Overwintering Gall Fly Larva, *Eurosta solidaginis*: Temperature Control of Glycerol and Sorbitol Levels 149:495
Storey JM, see Storey KB
Storey JM, see Storey KB, et al
Storey KB (1981) Effects of Arginine Phosphate and Octopine on Glycolytic Enzyme Activities from *Sepia officinalis* Mantle Muscle 142:501
Storey KB, Baust JG, Storey JM (1981) Intermediary Metabolism During Low Temperature Acclimation in the Overwintering Gall Fly Larva, *Eurosta solidaginis* 144:183
Storey KB, Storey JM (1978) Energy Metabolism in the Mantle Muscle of the Squid, *Loligo pealeii* 123:169
Storey KB, Storey JM (1979) Octopine Metabolism in the Cuttlefish, *Sepia officinalis*: Octopine Production by Muscle and Its Role as an Aerobic Substrate for Non-Muscular Tissues 131:311
Storey KB, Storey JM (1981) Biochemical Strategies of Overwintering in the Gall Fly Larva, *Eurosta solidaginis*: Effect of Low Temperature Acclimation on the Activities of Enzymes of Intermediary Metabolism 144:191
Storey KB, see Plaxton WC
Storey KB, see Storey JM
Storier D, Wollberg Z, Ar A (1981) Low and Nonrhythmic Heart Rate of the Mole Rat (*Spalax ehrenbergi*): Control by the Autonomic Nervous System 142:533
StormoGipson DJ, see Bicker G, et al
Stout MA, see Diecke FPJ
Stowe S (1981) Effects of Illumination Changes on Rhabdom Synthesis in a Crab 142:19
Stowe S (1982) Rhabdom Synthesis in Isolated Eyestalks and Retinae of the Crab *Leptograpsus variegatus* 148:313
Stowe S, see Laughlin S, et al
Strand CE, see Bintz GL
Stratakis E (1980) Tryptophan Metabolism During Development of the Stick Insect, *Carausius morosus* Br. Tissue Distribution and Interrelationships of Metabolites of the Kynurenine Pathway 137:123
Stratakis E (1981) Subcellular Localization and Properties of Kynurenine 3-Hydroxylase from Eggs of *Ephestia kühniella* Z. 141:451
Stratakis E, Schartau W (1979) Tryptophan 2,3-Dioxygenase in the Development of the Stick Insect, *Carausius morosus* Br. 132:351
Streit B (1978) Changes in Protein, Lipid, and Carbohydrate Content during Starvation in the Fresh-Water Limpet *Ancylus fluviatilis* (Basommatophora) 123:149
Streng R, see Prager J
Strickland ML, Moore PL, Pang PKT, Crass MF III (1982) Cardiovascular Effects of Parathyroid Hormone in the Frog, *Rana catesbeiana* 147:101
Suarez RK, Hochachka PW (1981) Preparation and Properties of Rainbow Trout Liver Mitochondria 143:269
Suarez RK, Hochachka PW (1981) The Pyruvate Branch Point in Fish Liver Mitochondria: Effects of Acylcarnitine Oxidation on Pyruvate Dehydrogenase and Pyruvate Carboxylase Activities 143:275
Suarez RK, Hochachka PW (1981) Pyruvate Carboxylase from Rainbow Trout Liver 143:281
Subbaraj R, Chandrashekaran MK (1978) Pulses of Darkness Shift the Phase of a Circadian Rhythm in an Insectivorous Bat 127:239
Suga N, see Jen PH-S, et al
Sugarman D, see Jakinovich W Jr, et al
Sugawara T (1979) Stretch Reception in the Bursa Copulatrix of the Butterfly, *Pieris rapae crucivora*, and Its Role in Behaviour 130:191
Sullivan B, see Weber RE, et al
Sulzman FM, Fuller CA, Moore-Ede MC (1979) Tonic Effects of Light on the Circadian System of the Squirrel Monkey 129:43
Sulzman FM, Krieger NR, Gooch VD, Hastings JW (1978) A Circadian Rhythm of the Luciferin Binding Protein from *Gonyaulax polyedra* 128:251
Summers CA, see Suthers RA
Summers RM, see Saunders JC
Sund-Laursen J, see Gesser H, et al
Surholt B, see Pörtner H-O, et al
Susswein AJ, Weiss KR, Kupfermann I (1978) The Effects of Food Arousal on the Latency of Biting in *Aplysia* 123:31
Sutcliffe JF, Mitchell BK (1982) Characterization of Galeal Sugar and Glucosinolate-Sensitive Cells in *Entomoscelis americana* Adults 146:393
Suthers RA, Fattu JM (1982) Selective Laryngeal Neurotomy and the Control of Phonation by the Echolocating Bat, *Eptesicus* 145:529
Suthers RA, Hector DH (1982) Mechanism for the Production of Echolocating Clicks

by the Grey Swiftlet, *Collocalia spodiopygia* 148:457
Suthers RA, Summers CA (1980) Behavioral Audiogram and Masked Thresholds of the Megachiropteran Echolocating Bat, *Rousettus* 136:227
Suthers RA, see Belknap DB
Suthers RA, see Fattu JM
Suthers RA, see Jen P H-S
Suzuki H, Watanabe M, Tsukahara Y, Tasaki K (1979) Duplex System in the Simple Retina of a Gastropod Mollusc, *Limax flavus* L. 133:125
Szabo T, see Moller P
Szamier RB, Bennett MVL (1980) Ampullary Electroreceptors in the Fresh Water Ray, *Potamotrygon* 138:225
Szamier RB, see Teeter JH, et al

T

Taghert PH, Willows AOD (1978) Control of a Fixed Action Pattern by Single, Central Neurons in the Marine Mollusk, *Tritonia diomedea* 123:253
Taigen TL, Pough FH (1981) Activity Metabolism of the Toad (*Bufo americanus*): Ecological Consequences of Ontogenetic Change 144:247
Takahashi JS, Menaker M (1982) Entrainment of the Circadian System of the House Sparrow: A Population of Oscillators in Pinealectomized Birds 146:245
Takahata M, Hisada M (1979) Functional Polarization of Statocyst Receptors in the Crayfish *Procambarus clarkii* Girard 130:201
Takahata M, Hisada M (1982) Statocyst Interneurons in the Crayfish *Procambarus clarkii* Girard. I. Identification and Response Characteristics 149:287
Takahata M, Hisada M (1982) Statocyst Interneurons in the Crayfish *Procambarus clarkii* Girard. II. Directional Sensitivity and Its Mechanism 149:301
Takahata M, see Ozeki M, et al
Takahata M, see Yoshino M, et al
Takamura T, see Tanimura T, et al
Tanimura T, Isono K, Takamura T, Shimada I (1982) Genetic Dimorphism in the Taste Sensitivity to Trehalose in *Drosophila melanogaster* 147:433
Tanimura T, Shimada I (1981) Multiple Receptor Proteins for Sweet Taste in *Drosophila* Discriminated by Papain Treatment 141:265
Tanouye MA, Wyman RJ (1981) Inhibition Between Flight Motoneurons in *Drosophila* 144:345
Taplin LE, Grigg GC, Harlow P, Dunson WA (1982) Lingual Salt Glands in *Crocodylus acutus* and *C. johnstoni* and Their Absence from *Alligator mississipiensis* and *Caiman crocodilus* 149:43
Tasaki K, see Suzuki H, et al
Tateda H, see Ichikawa T
Tateda H, see Mizunami M, et al
Tateda H, see Yamashita S
Tautz J (1978) Reception of Medium Vibration by Thoracal Hairs of Caterpillars of *Barathra brassicae* L. (Lepidoptera, Noctuidae). II. Response Characteristics of the Sensory Cell 125:67
Tautz J, Masters WM, Aicher B, Markl H (1981) A New Type of Water Vibration Receptor on the Crayfish Antenna. I. Sensory Physiology 144:533
Tautz J, see Ehret G, et al
Tautz J, see Kramer B, et al
Tautz J, see Masters WM, et al
Tautz J, see Pflüger H-J
Tavolga WN, see Popper AN
Taylor DH, Adler K (1978) The Pineal Body: Site of Extraocular Perception of Celestial Cues for Orientation in the Tiger Salamander (*Ambystoma tigrinum*) 124:357
Taylor DH, see Adler K
Taylor EW, Butler PJ (1978) Aquatic and Aerial Respiration in the Shore Crab, *Carcinus maenas* (L.), Acclimated to 15 °C 127:315
Taylor EW, Butler PJ, Al-Wassia A (1977) Some Responses of the Shore Crab, *Carcinus maenas* (L.) to Progressive Hypoxia at Different Acclimation Temperatures and Salinities 122:391
Taylor EW, Butler PJ, Al-Wassia A (1978) Erratum 123:192
Taylor EW, Wheatly MG (1979) The Behaviour and Respiratory Physiology of the Shore Crab, *Carcinus maenas* (L.) at Moderately High Temperatures 130:309
Taylor EW, Wheatly MG (1980) Ventilation, Heart Rate and Respiratory Gas Exchange in the Crayfish *Austropotamobius pallipes* (Lereboullet) Submerged in Normoxic Water and Following 3 h Exposure in Air at 15 °C 138:67
Taylor EW, see Butler PJ, et al
Taylor EW, see Short S, et al
Taylor EW, see Wheatly MG
Taylor W, Gooch VD, Hastings JW (1979) Period Shortening and Phase Shifting Effects of Ethanol on the *Gonyaulax* Glow Rhythm 130:355
Taylor W, Hastings JW (1979) Aldehydes Phase Shift the *Gonyaulax* Clock 130:359
Taylor W, Krasnow R, Dunlap JC, Broda H, Hastings JW (1982) Critical Pulses of Anisomycin Drive the Circadian Oscillator in *Gonyaulax* Towards Its Singularity 148:11
Taylor W, see Dunlap JC, et al
Taylor W, see Krasnow R, et al
Taylor W, see Rensing L, et al
Tazawa H, Mochizuki M, Piiper J (1979) Blood Oxygen Dissociation Curve of the Frogs *Rana catesbeiana* and *Rana brevipoda* 129:111
Teeter JH, Bennett MVL (1981) Synaptic Transmission in the Ampullary Electroreceptor of the Transparent Catfish, *Kryptopterus* 142:371
Teeter JH, Szamier RB, Bennett MVL (1980) Ampullary Electroreceptors in the Sturgeon *Scaphirhynchus platorynchus* (Rafinesque) 138:213
Teeter JH, see Johnsen PB
Tempel P, see Himstedt W, et al
Terman M, see Boulos Z
Terwilliger RC, see Ingermann RL
Tetens V, Lykkeboe G (1981) Blood Respiratory Properties of Rainbow Trout, *Salmo gairdneri*: Responses to Hypoxia Acclimation and Anoxic Incubation of Blood in vitro 145:117
Tewary PD, Kumar V (1981) Circadian Periodicity and the Initiation of Gonadal Growth in Male Blackheaded Buntings (*Emberiza melanocephala*) 144:201
Theiß J (1979) Mechanoreceptive Bristles on the Head of the Blowfly: Mechanics and Electrophysiology of the Macrochaetae 132:55
Theophilidis G, Burns MD (1979) A Muscle Tension Receptor in the Locust Leg 131:247
Thillart G van den, Kesbeke F, Waarde A van (1980) Anaerobic Energy-Metabolism of Goldfish, *Carassius auratus* (L.). Influence of Hypoxia and Anoxia on Phosphorylated Compounds and Glycogen 136:45
Thillart G van den, Verbeek R (1982) Substrates for Anaerobic CO_2-Production by the Goldfish, *Carassius auratus* (L.): Decarboxylation of ^{14}C-Labeled Metabolites 149:75
Thillart G van den, Waarde A van, Dobbe F, Kesbeke F (1982) Anaerobic Energy Metabolism of Goldfish, *Carassius auratus* (L.). Effects of Anoxia on the Measured and Calculated NAD^+/NADH Ratios in Muscle and Liver 146:41
Thillart G van den, see Waarde A van, et al
Thomas DW, see Fullard JH
Thomas S, Belaud A, Barthelemy L, Peyraud C (1980) Acid-Base Status in Plasma of Trout and Eel in Hypocapnic and Normocapnic Conditions 140:249
Thomas S, Ruz H Le (1982) A Continuous Study of Rapid Changes in Blood Acid-Base Status of Trout During Variations of Water P_{CO_2} 148:123
Thompson CS, Page CH (1982) Command Fiber Activation of Superficial Flexor Motoneurons in the Lobster Abdomen 148:515
Thompson JL, see Shuttleworth TJ
Thompson PR, Hepburn HR (1978) Changes in Chemical and Mechanical Properties of Honeybee (*Apis mellifera adansonii* L.) Cuticle During Development 126:257
Thompson PR, see Andersen SO, et al
Thompson RJ, Bayne CJ, Moore MN, Carefoot TH (1978) Haemolymph Volume, Changes in the Biochemical Composition of the Blood, and Cytological Responses of the Digestive Cell in *Mytilus californianus* Conrad, Induced by Nutritional, Thermal and Exposure Stress 127:287

Thompson RJ, Livingstone DR, Zwaan A de (1980) Physiological and Biochemical Aspects of the Valve Snap and Valve Closure Responses in the Giant Scallop *Placopecten magellanicus*. I. Physiology 137:97
Thompson RJ, see Zwaan A de, et al
Thorson J, Weber T, Huber F (1982) Auditory Behavior of the Cricket. II. Simplicity of Calling-Song Recognition in *Gryllus*, and Anomalous Phonotaxis at Abnormal Carrier Frequencies 146:361
Thorson J, see Seyfarth E-A, et al
Thorson J, see Weber T, et al
Thurm U, Wessel G (1979) Metabolism-Dependent Transepithelial Potential Differences at Epidermal Receptors of Arthropods. I. Comparative Data 134:119
Thurm U, see Erler G
Thurm U, see Küppers J
Tichy H (1979) Hygro- and Thermoreceptive Triad in Antennal Sensillum of the Stick Insect, *Carausius morosus* 132:149
Till HW, see Bauer C, et al
Tinbergen J, Abeln RG (1983) Spectral Sensitivity of the Landing Blowfly 150:319
Tobias M, Murphey RK (1979) The Response of Cercal Receptors and Identified Interneurons in the Cricket (*Acheta domesticus*) to Airstreams 129:51
Tobias ML, see Ritzmann RE, et al
Tokarski T, see Hafner GS, et al
Tolman JH, Steele JE (1980) The Effect of the Corpora Cardiaca-Corpora Allata System on Oxygen Consumption in the Cockroach Rectum: The Role of Na^+ and K^+ 138:347
Tolman JH, see Steele JE
Tom W, see Camhi JM
Tom W, see Camhi JM, et al
Tomioka K, Chiba Y (1982) Post-Embryonic Development of Circadian Rhythm in the Cricket, *Gryllus bimaculatus*: A Rhythm Reversal 147:299
Tong SL (1982) The Nucleus Praeeminentialis: An Electro- and Mechanoreceptive Center in the Brainstem of the Catfish 145:299
Tong SL, Bullock TH (1982) Electroreceptive Representation and Its Dynamics in the Cerebellum of the Catfish, *Ictalurus nebulosus* (Ictaluridae, Siluriformes) 145:289
Tong SL, Bullock TH (1982) The Sensory Functions of the Cerebellum of the Thornback Ray, *Platyrhinoidis triseriata* 148:399
Toolson EC, Hadley NF (1979) Seasonal Effects on Cuticular Permeability and Epicuticular Lipid Composition in *Centruroides sculpturatus* Ewing 1928 (Scorpiones: Buthidae) 129:319
Tootell RBH, see Jacobs GH, et al
Traut DL, see Bittner GD
Trouth CO, see Lall AB, et al
Tsacopoulos M, see Evêquoz V, et al
Tscharntke H, see Smola U
Tsukahara Y, see Suzuki H, et al
Tsutsumi V, Frixione E, Aréchiga H (1981) Transformations in the Cytoplasmic Structure of Crayfish Retinula Cells During Light- and Dark-Adaptation 145:179
Turek FW, see Earnest DJ
Turek FW, see Ellis GB
Turek FW, see Laitman RS
Tuttle MD, see Ryan MJ, et al
Tuurala H, see Nikinmaa M, et al
Tuurala H, see Soivio A
Tyrer M, see Bacon J

U

Ueck M, see Meissl H
Ultsch GR, Jackson DC, Moalli R (1981) Metabolic Oxygen Conformity Among Lower Vertebrates: The Toadfish Revisited 142:439
Umekita S, see Okitsu S, et al
Underwood H (1978) Photoperiodic Time Measurement in the Male Lizard *Anolis carolinensis* 125:143
Underwood H (1979) Melatonin Affects Circadian Rhythmicity in Lizards 130:317
Underwood H (1981) Circadian Organization in the Lizard *Sceloporus occidentalis*: The Effects of Pinealectomy, Blinding, and Melatonin 141:537
Underwood H, Hall D (1982) Photoperiodic Control of Reproduction in the Male Lizard *Anolis carolinensis* 146:485
Urano A, Gorbman A (1981) Effects of Pituitary Hormonal Treatment on Responsiveness of Anterior Preoptic Neurons in Male Leopard Frogs, *Rana pipiens* 141:163
Urban GP, see Willot JF

V

Valk-Fai T, Crowe A (1978) Analyses of Reflex Movements in the Hind Limbs of the Terrapin *Pseudemys scripta elegans* 125:351
Valk-Fai T, Crowe A (1979) Further Analyses of Reflex Movements in the Hind Limbs of the Terrapin, *Pseudemys scripta elegans* 130:241
Vandeputte-Poma J (1980) Feeding, Growth and Metabolism of the Pigeon, *Columba livia domestica*: Duration and Role of Crop Milk Feeding 135:97
Vaněček J, see Illnerová H
Vanegas H, see Northmore DPM, et al
Vardi N, Camhi JM (1982) Functional Recovery from Lesions in the Escape System of the Cockroach. I. Behavioral Recovery 146:291
Vardi N, Camhi JM (1982) Functional Recovery from Lesions in the Escape System of the Cockroach. II. Physiological Recovery of the Giant Interneurons 146:299
Vater M (1981) Single Unit Responses to Linear Frequency-Modulations in the Inferior Colliculus of the Greater Horseshoe Bat, *Rhinolophus ferrumequinum* 141:249
Vater M (1982) Single Unit Responses in Cochlear Nucleus of Horseshoe Bats to Sinusoidal Frequency and Amplitude Modulated Signals 149:369
Vater M, Schlegel P (1979) Comparative Auditory Neurophysiology of the Inferior Colliculus of Two Molossid Bats, *Molossus ater* and *Molossus molossus*. II. Single Unit Responses to Frequency-Modulated Signals and Signal and Noise Combinations 131:147
Vater M, Schlegel P, Zöller H (1979) Comparative Auditory Neurophysiology of the Inferior Colliculus of Two Molossid Bats, *Molossus ater* and *Molossus molossus*. I. Gross Evoked Potentials and Single Unit Responses to Pure Tones 131:137
Vaz Nunes M, Veerman A (1979) Photoperiodic Time Measurement in Spider Mites. I. Development of a Two Interval Timers Model 134:203
Vaz Nunes M, Veerman A (1979) Photoperiodic Time Measurement in Spider Mites. II. Effects of Skeleton Photoperiods 134:219
Vedel JP, Clarac F (1979) Combined Reflex Actions by Several Proprioceptive Inputs in the Rock Lobster Walking Legs 130:251
Vedel JP, see Rossi-Durand C
Veen T van, see Hartwig HG
Veerman A, see Vaz Nunes M
Vendrely R, see Ghidalia W, et al
Venkatesh K, Morrison PE (1982) Blood Meal as a Regulator of Triacylglycerol Synthesis in the Haematophagous Stable Fly, *Stomoxys calcitrans* 147:49
Verbeek R, see Thillart G van den
Vergara GA, Hughes GM (1980) Phospholipids in Washings from the Lungs of the Frog (*Rana pipiens*) 139:117
Verhoeven A, see Zwaan A de, et al
Vernet R, see Lemire M, et al
Vetterling W, see Krasnow R, et al
Via SE (1977) Visually Mediated Snapping in the Bulldog Ant: A Perceptual Ambiguity between Size and Distance 121:33
Viancour TA (1979) Electroreceptors of a Weakly Electric Fish. I. Characterization of Tuberous Receptor Organ Tuning 133:317
Viancour TA (1979) Electroreceptors of a Weakly Electric Fish. II. Individually Tuned Receptor Oscillations 133:327
Villet J, see Davis WJ, et al
Vislie T (1980) Hyper-Osmotic Cell Volume Regulation in vivo and in vitro in Flounder (*Platichthys flesus*) Heart Ventricles 140:185
Vlahopoulos V, see Jakinovich W Jr, et al
Vleck D, Gleeson TT, Bartholomew GA (1981) Oxygen Consumption During Swimming in Galapagos Marine Iguanas and Its Ecological Correlates 141:531
Vleck D, see Bartholomew GA
Vogel H, see Heinzeller T
Vogt K, Kirschfeld K, Stavenga DG (1982) Spectral Effects of the Pupil in Fly Photoreceptors 146:145

Vollmar J, see Kaiser W, et al
Volman S, see Camhi JM, et al
Volman S, see Dagan D
Voogt PA, see Plas AJ van der
Vorhaben JE, see Campbell JW
Vorhaben JE, see Sollock RL, et al
Vyskočil, F, Gutmann E (1977) Contractile and Histochemical Properties of Skeletal Muscles in Hibernating and Awake Golden Hamsters 122:385

W

Waarde A van, Thillart G van den, Dobbe F (1982) Anaerobic Metabolism of Goldfish, *Carassius auratus* (L.). Influence of Anoxia on Mass-Action Ratios of Transaminase Reactions and Levels of Ammonia and Succinate 147:53
Waarde A van, Thillart G van den, Kesbeke F (1983) Anaerobic Energy Metabolism of the European Eel, *Anguilla anguilla* L. 149:469
Waarde A van, see Thillart G van den, et al
Waddington KD (1982) Honey Bee Foraging Profitability and Round Dance Correlates 148:297
Waddington KD, Heinrich B (1979) The Foraging Movements of Bumblebees on Vertical "Inflorescences": An Experimental Analysis 134:113
Wahlqvist I (1980) Effects of Catecholamines on Isolated Systemic and Branchial Vascular Beds of the Cod, *Gadus morhua* 137:139
Wahlqvist I, Nilsson S (1980) Adrenergic Control of the Cardio-Vascular System of the Atlantic Cod, *Gadus morhua*, During "Stress" 137:145
Wahlqvist I, Nilsson S (1981) Sympathetic Nervous Control of the Vasculature in the Tail of the Atlantic Cod, *Gadus morhua* 144:153
Wahrenbrock EA, see Kooyman GL, et al
Waite JH, Saleuddin ASM, Andersen SO (1979) Periostracin – A Soluble Percursor of Sclerotized Periostracum in *Mytilus edulis* L. 130:301
Waladde SM (1982) Tip-Recording from Ixodid Tick Olfactory Sensilla: Responses to Tick Related Odours 148:411
Waldner I, see Bleckmann H, et al
Waldrop B, see Kirk MD, et al
Waldrop BR, see Kirk MD, et al
Waldvogel JA, Benvenuti S, Keeton WT, Papi F (1978) Homing Pigeon Orientation Influenced by Deflected Winds at Home Loft 128:297
Walesby NJ, Johnston IA (1980) Temperature Acclimation in Brook Trout Muscle: Adenine Nucleotide Concentrations, Phosphorylation State and Adenylate Energy Charge 139:127
Walesby NJ, see Johnston IA
Walker E, see Wheatly DN
Walker TJ, see Paul RC
Walker TJ, see Prestwich KN
Walkowiak W (1980) The Coding of Auditory Signals in the Torus semicircularis of the Fire-Bellied Toad and the Grass Frog: Responses to Simple Stimuli and to Conspecific Calls 138:131
Wallraff HG (1980) Does Pigeon Homing Depend on Stimuli Perceived During Displacement? I. Experiments in Germany 139:193
Wallraff HG (1980) Olfaction and Homing in Pigeons: Nerve-Section Experiments, Critique, Hypotheses 139:209
Wallraff HG (1981) The Olfactory Component of Pigeon Navigation: Steps of Analysis 143:411
Wallraff HG, Foà A, Ioalé P (1980) Does Pigeon Homing Depend on Stimuli Perceived During Displacement? II. Experiments in Italy 139:203
Walsberg GE, Campbell GS, King JR (1978) Animal Coat Color and Radiative Heat Gain: A Re-Evaluation 126:211
Walsh PJ (1981) Purification and Characterization of Two Allozymic Forms of Octopine Dehydrogenase from California Populations of *Metridium senile*. The Role of Octopine Dehydrogenase in the Anaerobic Metabolism of Sea Anemones 143:213
Walter AE, see Sillman AJ, et al
Walthall WW, Hartman HB (1981) Receptors and Giant Interneurons Signaling Gravity Orientation Information in the Cockroach *Arenivaga* 142:359
Wang LCH, see Abbotts B
Warburg MR, see Sivak JG
Wasserthal LT (1980) Oscillating Haemolymph 'Circulation' in the Butterfly *Papilio machaon* L. Revealed by Contact Thermography and Photocell Measurements 139:145
Wasserthal LT (1981) Oscillating Haemolymph 'Circulation' and Discontinuous Tracheal Ventilation in the Giant Silk Moth *Attacus atlas* L. 145:1
Wasserthal LT (1982) Antagonism Between Haemolymph Transport and Tracheal Ventilation in an Insect Wing (*Attacus atlas* L.). A Disproof of the Generalized Model of Insect Wing Circulation 147:27
Watanabe M, see Suzuki H, et al
Waterman TH, see Eguchi E
Waterman TH, see Nässel DR
Watson D, Bastian J (1979) Frequency Response Characteristics of Electroreceptors in the Weakly Electric Fish, *Gymnotus carapo* 134:191
Watson WH III (1980) *Limulus* Gill Cleaning Behavior 141:67
Watson WH III (1980) Long-Term Patterns of Gill Cleaning, Ventilation and Swimming in *Limulus* 141:77
Watson WH III, Wyse GA (1978) Coordination of the Heart and Gill Rhythms in *Limulus* 124:267
Watson WH III, see Wyse GA, et al
Webb PW (1982) Avoidance Responses of Fathead Minnow to Strikes by Four Teleost Predators 147:371
Webb RC, Bohr DF (1980) A Comparative and Regional Study of Potassium Induced Relaxation of Vascular Smooth Muscle 135:357
Weber RE, Bonaventura J, Sullivan B, Bonaventura C (1978) Oxygen Equilibria and Ligand-Binding Kinetics of Erythrocruorins from Two Burrowing Polychaetes of Different Modes of Life, *Marphysa sanguinea* and *Diopatra cuprea* 123:177
Weber RE, Hagerman L (1981) Oxygen and Carbon Dioxide Transporting Qualities of Hemocyanin in the Hemolymph of a Natant Decapod *Palaemon adspersus* 145:21
Weber RE, Lykkeboe G (1978) Respiratory Adaptations in Carp Blood. Influences of Hypoxia, Red Cell Organic Phosphates, Divalent Cations and CO_2 on Hemoglobin-Oxygen Affinity 128:127
Weber RE, see Lykkeboe G
Weber T, Caillère L (1978) Thermistor Telemetry of Ventilation During Prey Capture by Dragonfly Larvae (*Cordulegaster boltoni*, Odonata) 128:341
Weber T, Thorson J, Huber F (1981) Auditory Behavior of the Cricket. I. Dynamics of Compensated Walking and Discrimination Paradigms on the Kramer Treadmill 141:215
Weber T, see Otto D
Weber T, see Thorson J, et al
Weeda E, see Gäde G, et al
Weeks JC (1982) Synaptic Basis of Swim Initiation in the Leech. I. Connections of a Swim-Initiating Neuron (Cell 204) with Motor Neurons and Pattern-Generating 'Oscillator' Neurons 148:253
Weeks JC (1982) Synaptic Basis of Swim Initiation in the Leech. II. A Pattern-Generating Neuron (Cell 208) Which Mediates Motor Effects of Swim-Initiating Neurons 148:265
Weerasuriya A, Ewert J-P (1981) Prey-Selective Neurons in the Toad's Optic Tectum and Sensorimotor Interfacing: HRP Studies and Recording Experiments 144:429
Wehner R, Bernard GD (1980) Intracellular Optical Physiology of the Bee's Eye. II. Polarizational Sensitivity 137:205
Wehner R, Meyer E (1981) Rhabdomeric Twist in Bees – Artefact or in vivo Structure? 142:1
Wehner R, Srinivasan MV (1981) Searching Behaviour of Desert Ants, Genus *Cataglyphis* (Formicidae, Hymenoptera) 142:315
Wehner R, see Bernard GD
Wehner R, see Mote MI
Wehner R, see Rossel S, et al
Wehrhan C, see Praagh JP van, et al
Weiler J, see Himstedt W, et al
Weiler R (1981) The Distribution of Center-Depolarizing and Center-Hyperpolarizing Bipolar Cell Ramifications Within the In-

ner Plexiform Layer of Turtle Retina 144:459
Weiner J, Górecki A (1981) Standard Metabolic Rate and Thermoregulation in Five Species of Mongolian Small Mammals 145:127
Weinheimer CJ, Pendergast DR, Spotila JR, Wilson DR, Standora EA (1982) Peripheral Circulation in *Alligator mississippiensis*: Effects of Diving, Fear, Movement, Investigator Activities, and Temperature 148:57
Weiss KR, see Dieringer N, et al
Weiss KR, see Susswein AJ, et al
Weiss TF, see Peterson SK, et al
Weissert R, Campenhausen C von (1981) Discrimination Between Stationary Objects by the Blind Cave Fish *Anoptichthys jordani* (Characidae) 143:375
Weissert R, see Campenhausen C von, et al
Weitzel G, Rensing L (1981) Evidence for Cellular Circadian Rhythms in Isolated Fluorescent Dye-Labelled Salivary Glands of Wild Type and an Arrhythmic Mutant of *Drosophila melanogaster* 143:229
Welch WR (1980) Evaporative Water Loss from Endotherms in Thermally and Hygrically Complex Environments: An Empirical Approach for Interspecific Comparisons 139:135
Wells J, see Houlihan DF, et al
Wells MJ, see Houlihan DF, et al
Wells RMG (1979) Haemoglobin-Oxygen Affinity in Developing Embryonic Erythroid Cells of the Mouse 129:333
Wells RMG, Hudson MJ, Brittain T (1981) Function of the Hemoglobin and the Gas Bubble in the Backswimmer *Anisops assimilis* (Hemiptera: Notonectidae) 142–515
Wendler G, see Dean J
Wendler G, see Graham D
Wendler G, see Horsmann U, et al
Wendler G, see Schmitz B, et al
Wenning A, Zerbst-Boroffka I, Bazin B (1980) Water and Salt Excretion in the Leech (*Hirudo medicinalis* L.) 139:97
Wenning A, see Zerbst-Boroffka I, et al
Wenzel BM, see Macadar AW, et al
Wessel G, see Thurm U
Westby GWM, Kirschbaum F (1977) Emergence and Development of the Electric Organ Discharge in the Mormyrid Fish, *Pollimyrus isidori*. I. The Larval Discharge 122:251
Westby GWM, Kirschbaum F (1978) Emergence and Development of the Electric Organ Discharge in the Mormyrid Fish, *Pollimyrus isidori*. II. Replacement of the Larval by the Adult Discharge 127:45
Westby GWM, Kirschbaum F (1982) Sex Differences in the Waveform of the Pulse-Type Electric Fish, *Pollimyrus isidori* (Mormyridae) 145:399
Westin J (1979) Responses to Wind Recorded from the Cercal Nerve of the Cockroach *Periplaneta americana*. I. Response Properties of Single Sensory Neurons 133:97
Westin J, Langberg JJ, Camhi JM (1977) Responses of Giant Interneurons of the Cockroach *Periplaneta americana* to Wind Puffs of Different Directions and Velocities 121:307
Westman K, see Soivio A, et al
Wever RA (1980) Circadian Rhythms of Finches Under Bright Light: Is Self-Sustainment a Precondition for Circadian Rhythmicity? 139:49
Wever RA (1980) Circadian Rhythms of Finches Under Steadily Changing Light Intensity: Are Self-Sustaining Circadian Rhythms Self-Excitatory? 140:113
Wheatly DN, Walker E (1980) Comparison of Amino Acid Uptake and Incorporation in *Tetrahymena pyriformis* and HeLa Cells 140:267
Wheatly MG, Taylor EW (1979) Oxygen Levels, Acid-Base Status and Heart Rate During Emersion of the Shore Crab *Carcinus maenas* (L.) into Air 132:305
Wheatly MG, see Taylor EW
White RH, Brown PK, Hurley AK, Bennett RR (1983) Rhodopsins, Retinula Cell Ultrastructure, and Receptor Potentials in the Developing Pupal Eye of the Moth *Manduca sexta* 150:153
White SE, see Lynch GR, et al
Wickelgren WO, see Matthews G
Wickler SJ, see Marsh RL
Widder EA, Case JF (1981) Two Flash Forms in the Bioluminescent Dinoflagellate, *Pyrocystis fusiformis* 143:43
Widder EA, Case JF (1982) Luminescent Microsource Activity in Bioluminescence of the Dinoflagellate, *Pyrocystis fusiformis* 145:517
Wieczorek H (1978) Biochemical and Behavioral Studies of Sugar Reception in the Cockroach 124:353
Wieczorek H (1980) Sugar Reception by an Insect Water Receptor 138:167
Wieczorek H (1982) A Biochemical Approach to the Electrogenic Potassium Pump of Insect Sensilla: Potassium Sensitive ATPases in the Labellum of the Fly 148:303
Wieczorek H, Köppl R (1978) Effect of Sugars on the Labellar Water Receptor of the Fly 126:131
Wieczorek H, Köppl R (1982) Reaction Spectra of Sugar Receptors in Different Taste Hairs of the Fly 149:207
Wiedenmann G (1980) Two Peaks in the Activity Rhythm of Cockroaches Controlled by One Circadian Pacemaker 137:249
Wiedenmann G (1983) Splitting in a Circadian Activity Rhythm: The Expression of Bilaterally Paired Oscillators 150:51
Wieland CM, see Eaton RC, et al
Wienhausen G, see Schöttler U, et al
Wiens TJ, Atwood HL (1978) Motoneuron Interactions in Crayfish Claw Control: Evidence from Intracellular Recording 124:237
Wiersma J, see Granzier HLM, et al
Wiese K (1981) Influence of Vibration on Cricket Hearing: Interaction of Low Frequency Vibration and Acoustic Stimuli in the Omega Neuron 143:135
Wiese K, Schultz R (1982) Intrasegmental Inhibition of the Displacement-Sensitive Pathway in the Crayfish (*Procambarus clarkii*) 147:447
Wiese K, Wollnik F, Jebram D (1980) The Protective Reflex of *Bowerbankia* (Bryozoa): Calibration and Use to Indicate Movements of the Medium Beneath a Capillary Surface Wave 137:297
Wieser W (1981) Responses of *Helix pomatia* to Anoxia: Changes of Solute Activity and Other Properties of the Haemolymph 141:503
Wieser W, Wright R (1978) D-Lactate Formation, D-LDH Activity and Glycolytic Potential of *Helix pomatia* L. 126:249
Wieser W, see Gruber K
Wietersheim A v, Ewert J-P (1978) Neurons of the Toad's (*Bufo bufo* L.) Visual System Sensitive to Moving Configurational Stimuli: A Statistical Analysis 126:35
Wietersheim A v, see Ewert J-P, et al
Wilhelm S, see Kuppert P, et al
Wilkens JL, see Young RE, et al
Wilkens LA, see Marzelli GA
Wilkes PRH, see McMahon B, et al
Williams B, see Northmore DPM, et al
Williams BJ, Larimer JL (1981) Neural Pathways of Reflex-Evoked Behaviors and Command Systems in the Abdomen of the Crayfish 143:27
Williams DS (1983) Changes of Photoreceptor Performance Associated with the Daily Turnover of Photoreceptor Membrane in Locusts 150:509
Williams DS, see Blest AD, et al
Williams JC Jr, Beyenbach KW (1983) Differential Effects of Secretagogues on Na and K Secretion in the Malpighian Tubules of *Aedes aegypti* (L.) 149:511
Williamson R, Burns MD (1982) Large Neurones in Locust Neck Connectives. I. Responses to Sensory Inputs 147:379
Willis JS, Ellory JC, Wolowyk MW (1980) Temperature Sensitivity of the Sodium Pump in Red Cells from Various Hibernator and Non-Hibernator Species 138:43
Willmund R (1979) Light Induced Modification of Phototactic Behaviour of *Drosophila melanogaster*. II. Physiological Aspects 129:35
Willot JF, Urban GP (1978) Response Properties of Neurons in Nuclei of the Mouse Inferior Colliculus 127:175
Willows AOD, see Taghert PH
Wilson DR, see Weinheimer CJ, et al
Wilson M (1978) The Functional Organisation of Locust Ocelli 124:297
Wilson M (1978) Generation of Graded Potential Signals in the Second Order Cells of Locust Ocellus 124:317
Wilson M (1978) The Origin and Properties

of Discrete Hyperpolarising Potentials in the Second Order Cells of Locust Ocellus 128:347
Wilson M, see Stavenga DG, et al
Wiltschko R, see Wiltschko W, et al
Wiltschko W, Wiltschko R, Emlen ST, Demong NJ (1980) Nocturnal Activity and Orientation Behavior During Spring Migration and Early Summer in the Indigo Bunting, *Passerina cyanea* 137:47
Wiltschko W, see Gwinner E
Wimer LT, see Ziegler R, et al
Wine JJ (1977) Crayfish Escape Behavior. II. Command-derived Inhibition of Abdominal Extension 121:173
Wine JJ (1977) Crayfish Escape Behavior. III. Monosynaptic and Polysynaptic Sensory Pathways Involved in Phasic Extension 121:187
Wine JJ, Hagiwara G (1977) Crayfish Escape Behavior. I. The Structure of Efferent and Afferent Neurons Involved in Abdominal Extension 121:145
Wine JJ, see Reichert H, et al
Wine JJ, see Sigvardt KA, et al
Winfree AT, Gordon H (1977) The Photosensitivity of a Mutant Circadian Clock 122:87
Wing KD, see Jones D, et al
Winlow W, see Haydon PG
Wipper E, see Engelhardt W v, et al
With ND de, Schors RC van der (1982) On the Interrrelations of the Na^+- and Cl^--Influxes in the Pulmonate Fresh-water Snail *Lymnaea stagnalis* 148:131
Withers PC (1981) The Effects of Ambient Air Pressure on Oxygen Consumption of Resting and Hovering Honeybees 141:433
Withers PC, see Hillman SS, et al
Wittenberger C, Coprean D (1981) Posteclosional Development of Phosphorylase Activity in Chick Pectoral Muscle 141:439
Wittmann D, see Praagh JP van, et al
Wohlers DW, Huber F (1978) Intracellular Recording and Staining of Cricket Auditory Interneurons (*Gryllus campestris* L., *Gryllus bimaculatus* DeGeer) 127:11
Wohlers DW, Huber F (1982) Processing of Sound Signals by Six Types of Neurons in the Prothoracic Ganglion of the Cricket, *Gryllus campestris* L. 146:161
Wohlers DW, see Esch H, et al
Wohlers DW, see Kleindienst H-U, et al
Woike M, Gewecke M (1978) Kinematic and Aerodynamic Parameters in Tethered Flying Siskins (*Carduelis spinus*, Passeres, Aves) 127:123
Wolf R, Gebhardt B, Gademann R, Heisenberg M (1980) Polarization Sensitivity of Course Control in *Drosophila melanogaster* 139:177
Wolf R, Heisenberg M (1980) On the Fine Structure of Yaw Torque in Visual Flight Orientation of *Drosophila melanogaster*. II. A Temporally and Spatially Variable Weighting Function for the Visual Field ('Visual Attention') 140:69
Wolf R, see Heisenberg M
Wolf R, see Heisenberg M, et al
Wolfe JL, see Barnett SA, et al
Wolfe JL, see Esher RJ
Wollberg Z, see Storier D, et al
Wollnik F, see Wiese K, et al
Wolowyk MW, see Willis JS, et al
Wong CC, Chiu KW (1979) The Snake Thyroid Gland V. Effects of Hypophysectomy on Iodine Metabolism in the Striped Racer, *Elaphe taeniura* 131:297
Wonneberger R, see Heisenberg M, et al
Woo NYS, Bern HA (1978) Vasoactive Properties of Urotensins I and II in a Columbiform and Three Galliform Birds, and a Bioassay for Urotensin I 126:193
Wood CM (1977) Cholinergic Mechanisms and the Response to ATP in the Systemic Vasculature of the Rainbow Trout 122:325
Wood DC (1982) Membrane Permeabilities Determining Resting, Action and Mechanoreceptor Potentials in *Stentor coeruleus* 146:537
Wood SC, Johansen K, Glass ML, Maloiy GMO (1978) Aerobic Metabolism of the Lizard *Varanus exanthematicus*: Effects of Activity, Temperature, and Size 127:331
Wood SC, see Burggren WW
Woolcock AJ, see Donnelly P
Woolman B, see Simmons JA, et al
Woscoboinik D, see Segura ET, et al
Wozniak J, see Gwinner E
Wozniak JA, see Lickey ME
Wright R, see Wieser W
Wunderer H, see Smola U
Wyatt GR, see Ziegler R, et al
Wyatt SS, see Ziegler R, et al
Wyman RJ, see Harcombe ES
Wyman RJ, see Tanouye MA
Wyse GA, Sanes DH, Watson WH III (1980) Central Neural Motor Programs Underlying Short- and Long-Term Patterns of *Limulus* Respiratory Activity 141:87
Wyse GA, see Watson WH III

Y

Yager DD, see Rheinlaender J, et al
Yamashita O, see Furusawa T, et al
Yamashita O, see Shimada S
Yamashita S, Tateda H (1981) Efferent Neural Control in the Eyes of Orb Weaving Spiders 143:477
Yamashita S, Tateda H (1983) Cerebral Photosensitive Neurons in the Orb Weaving Spiders, *Argiope bruennichii* and *A. amoena* 150:467
Yamashita S, see Mizunami M, et al
Yancey PH, Somero GN (1978) Temperature Dependence of Intracellular pH: Its Role in the Conservation of Pyruvate Apparent K_m Values of Vertebrate Lactate Dehydrogenases 125:129
Yancey PH, Somero GN (1978) Urea-Requiring Lactate Dehydrogenases of Marine Elasmobranch Fishes 125:135
Yang J, Lent CM (1983) Calcium Depletion Produces Na^+-Dependent, Sustained Depolarizations of Retzius Cell Membranes in the Leech CNS 150:499
Yingst DR (1978) The Freezing Resistance of the Arctic Subtidal Isopod, *Mesidotea entomon* (Linnaeus, 1758) 125:165
Yokohari F (1978) Hygroreceptor Mechanism in the Antenna of the Cockroach *Periplaneta* 124:53
Yokota SD, Shoemaker VH (1981) Xanthine Excretion in a Desert Scorpion, *Paruroctonus mesaensis* 142:423
Yoshino M, Takahata M, Hisada M (1980) Statocyst Control of the Uropod Movement in Response to Body Rolling in Crayfish 139:243
Yoshino M, Takahata M, Hisada M (1982) Interspecific Differences in Crustacean Homologous Behavior: Neural Mechanisms Underlying the Reversal of Uropod Steering Movement 145:471
Young RE, Wilkens JL, Dodd C (1980) Pharmacological Dissection of a Neural Pattern Generator 139:1
Young SR (1979) Effect of Temperature Change on the Metabolic Rate of an Antarctic Mite 131:341
Young SR, Dedwylder RD II, Friesen WO (1981) Responses of the Medicinal Leech to Water Waves 144:111

Z

Zabala NA, see D'Alessio G, et al
Zachariassen KE (1980) The Role of Polyols and Nucleating Agents in Cold-Hardy Beetles 140:227
Zack S (1978) The Effects of Foreleg Amputation on Head Grooming Behavior in the Praying Mantis, *Sphodromantis lineola* 125:253
Zarnack W (1978) A Transducer Recording Continuously 3-Dimensional Rotations of Biological Objects 126:161
Zebe E, see Schöttler U, et al
Zebe E, see Schroff G
Zeil J (1983) Sexual Dimorphism in the Visual System of Flies: The Compound Eyes and Neural Superposition in Bibionidae (Diptera) 150:379
Zeil J (1983) Sexual Dimorphism in the Visual System of Flies: The Free Flight Behaviour of Male Bibionidae (Diptera) 150:395
Zerbst-Boroffka I (1978) Blood Volume as a Controlling Factor for Body Water Homeostasis in *Hirudo medicinalis* 127:343
Zerbst-Boroffka I, Wenning A, Bazin B (1982) Primary Urine Formation During Diuresis in the Leech, *Hirudo medicinalis* L. 146:75
Zerbst-Boroffka I, see Wenning A, et al
Ziegler R, Ashida M, Fallon AM, Wimer LT, Wyatt SS, Wyatt GR (1979) Regulation of

Glycogen Phosphorylase in Fat Body of Cecropia Silkmoth Pupae 131:321
Zimmerman ML (1982) Carbohydrate and Torpor Duration in Hibernating Golden-Mantled Ground Squirrels (*Citellus lateralis*) 147:129
Zimmermann RP (1978) Field Potential Analysis and the Physiology of Second-Order Neurons in the Visual System of the Fly 126:297
Zöller H, see Möller J, et al
Zöller H, see Vater M, et al
Zolotov V, see Frantsevich L, et al
Zottoli SJ (1981) Electrophysiological and Morphological Characterization of the Winter Flounder Mauthner Cell 143:541
Zucker I, see Fitzgerald K, et al
Zucker RS, Bruner J (1977) Long-lasting Depression and the Depletion Hypothesis at Crayfish Neuromuscular Junctions 121:223
Zurburg W, see Zwaan A de, et al
Zwaan A de, Bont AMT de, Verhoeven A (1982) Anaerobic Energy Metabolism in Isolated Adductor Muscle of the Sea Mussel *Mytilus edulis* L. 149:137
Zwaan A de, Bont AMT de, Zurburg W, Bayne BL, Livingstone DR (1983) On the Role of Strombine Formation in the Energy Metabolism of Adductor Muscle of a Sessile Bivalve 149:557
Zwaan A de, Skjoldal HR (1979) Anaerobic Energy Metabolism of the Scavenging Isopod *Cirolana borealis* (Lilljeborg) 129:327
Zwaan A de, Thompson RJ, Livingstone DR (1980) Physiological and Biochemical Aspects of the Valve Snap and Valve Closure Responses in the Giant Scallop *Placopecten magellanicus*. II. Biochemistry 137:105
Zwaan A de, see Ebberink RHM
Zwaan A de, see Thompson RJ, et al

J Comp Physiol (1983) 151:35–107

Journal of Comparative Physiology
© Springer-Verlag 1983

Subject Index to Volumes 121–150 (1977–1983)

A

Abdomen, load compensation in the crayfish 123:349 (Page CH)
Abdominal extension, crayfish escape behavior 121:145 (Wine JJ, Hagiwara G), 173, 187 (Wine JJ)
– ganglion, terminal, local interneurons in crayfish – 149:145 (Reichert H, et al)
– proprioceptor reflex, crayfish 122:289 (Lunteren E van)
Acanthocephala, see *Moniliformis*
Acantholeberis, sodium balance 129:289 (Potts WTW, Fryer G)
Acari, photoperiodic time measurement in *Tetranychus* 134:203, 219 (Vaz Nunes M, Veerman A)
–, responses of *Rhipicephalus* and *Amblyomma* olfactory sensilla 148:411 (Waladde SM)
–, temperature and metabolism in *Alaskozetes* 131:341 (Young SR)
Acclimatization, seasonal, to temperature in finches 125:101 (Carey C, et al)
Accommodation in bird eyes 137:267 (Levy B, Sivak JG)
Acetylcholine, sensitivity of lobster muscles to – 138:187 (Lingle C)
Acetylcholinesterase activity in a snail 125:59 (Rajarami Reddy G, et al)
Achatina, olfactory orientation to foods 136:267 (Croll RP, Chase R)
–, olfactory sensitivity 148:225 (Chase R)
–, tentacular function in olfactory orientation 143:357 (Chase R, Croll RP)
Acheta, cercal receptors and interneurons 129:51 (Tobias M, Murphey RK)
–, constancy mechanism in cercal system 137:287 (Rozhkova GI)
–, dendritic impulse initiation in an epithelial sensory neuron 142:237 (Erler G, Thurm U)
–, equilibrium detecting system 150:141 (Sakaguchi DS, Murphey RK)
–, inhibition of interneurons 135:269 (Levine RB, Murphey RK)
–, mechanical time resolution in the ear 143:297 (Larsen ON)
Achromatic vision in bees at low light intensities 141:389 (Menzel R)
Acid-base balance of crayfish hemolymph 149:463 (Dejours P, Armand J)
– –, effects of hypoxia in dogfish 132:297 (Butler PJ et al)
– – and diurnal variation of ambient oxygen tension in the carp 128:117 (Lykkeboe G, Weber RE)
– – in a salamander 144:241 (Burggren WW, Wood SC)
– changes, effect of ventilation on – in crab hemolymph 141:489 (Burnett LE, Johansen K)
– regulation in fish blood plasma 140:249 (Thomas S, et al)
– status of crab emerged into air 132:305 (Wheatly MG, Taylor EW)
– – during crab temperature acclimation 128:109 (McMahon B, et al)
– –, effect of temperature on – in spider hemolymph 134:331 (Loewe R, Brauer de Eggert H)
– –, rapid changes in trout blood 148:123 (Thomas S, Le Ruz H)
Acid phosphatase in crab photoreceptors 149:353 (Couet HG de, Blest AD)
Acidosis, effect on flounder cardiac contractility 131:293 (Gesser H, Poupa O)
–, effect on myocardial Ca distribution in flounder and rat 143:245 (Gesser H, Poupa O)
–, hypercapnic, in the crab 123:137 (Cameron JN)
–, –, effect of Ca on cardiac muscle 127:307 (Gesser H, Poupa O)
Acomys, heat production and dissipation 142:445 (Haim A, Borut A)
Acoustic behavior of bats in the field 142:67 (Miller LA, Degn HJ)
– evoked activity in shark brains 129:223 (Bullock TH, Corwin JT)
– fovea in bat inferior colliculus 132:47 (Schuller G, Pollak G)
– imaging in bat sonar 135:61 (Simmons JA, Stein RA)
– orientation in female crickets 148:431 (Schmitz B, et al)
– signals, influence on hormone production in frog testes 140:25 (Brzoska J, Obert H-J)
Acoustical information processing, mouse 122:65 (Ehret G, Frankenreiter M)
– responses of insect hair receptors 127:185 (Fletcher NH)
Acrididae, stridulatory movements 122:53 (Helversen O von, Elsner N)
Acripeza, auditory function 142:169 (Hill KG, Oldfield BP)
Acrochordus, respiratory and cardiovascular physiology 144:215 (Seymour RS, et al)
ACTH, effect on habituation in the toad 131:129 (Horn E, et al)
Action potential broadening in slug buccal neuron 146:449 (Gilette R, et al)
– – in hydromedusan subumbrellar swimming muscle 144:401 (Spencer AN, Satterlie RA)
– potentials of silkworm neuroscretory and non-neurosecretory cells 140:43 (Miyazaki S)
– – in siphonophore myoid epithelium 143:329 (Chain BM et al); 144:555 (Bone Q)
Activity, aerobic metabolism in amphibians, during – 129:309 (Hillman SS, et al)
–, effect of cold on mouse – 123:91 (Barnett SA, et al)
–, rhythmic, in *Balanus* 130:183 (Clark JV)
– metabolism of toads 144:247 (Taigen TL, Pough FH)
– pattern, control by single central neurons in *Tritonia* 123:253 (Taghert PH, Willows AOD)
– patterns in snail motoneurones 142:259 (Brace RC, Quicke DLJ)
Actomyosin ATPases in fish temperature acclimation 129:163 (Johnston IA), 169 (Johnston IA, Walesby NJ)
Adenine nucleotide concentrations in cold acclimated trout muscle 139:127 (Walesby NJ, Johnston IA)
Adenosine, hemodynamic effects on trout gills 130:325 (Colin DA, et al)
Adioryx, auditory sensitivity 132:203 (Coombs S, Popper AN)

Adoxophyes, olfactory cell responses to pheromone components 121:205 (Otter CJ Den)
Adrenaline, effect on flounder gill potentials 124:129 (Shuttleworth TJ)
–, effect of temperature on frog heart responses to – 132:313 (Stene-Larsen G, Helle KB)
–, inotropic effects on anoxic and hypercapnic fish myocardium 147:123 (Gesser H, et al)
Adrenergic control of cod circulation 137:145 (Wahlqvist I, Nilsson S)
– – of toad water uptake across the skin 146:101 (Segura ET, et al)
– innervation of teleost hearts 147:85 (Donald J, Campbell G)
– regulation of fish chloride secretion, role of cAMP 145:29 (Mendelsohn SA, et al.)
Adrenoceptors in trout atrium 139:109; 143:161 (Ask JA, et al)
Aedes, Na and K secretion in Malpighian tubules 149:511 (Williams JC Jr., Beyenbach KW)
–, salt excreting organ 138:59 (Asakura K)
Aerodynamic force production in stationary flying blowfly 150:251 (Nachtigall W, Roth W)
– forces, locust forewings as generators of – 142:127 (Nachtigall W), 135 (Pfau HK, Nachtigall W)
– properties of locust antennae 139:357 (Gewecke M, Heinzel H-G)
Aeschna, behavioral sequence in the larva 127:89 (Etienne AS)
–, connexions between ocellar receptors and second-order neurons 149:389 (Simmons PJ)
–, neurons of median ocellus 139:25 (Patterson JA, Chappell RL)
–, ocellar neuron spectral sensitivity 144:91 (Mobbs PG, et al)
Afferent pathways for gastropod chemo- and mechanoreception 149:221, 235 (Bicker G et al)
Agelaius, active space of song 147:511 (Brenowitz EA)
–, single cells in brainstem auditory nuclei 126:347 (Sachs MB, Sinnott JM)
Agelena, mechanics of trichobothria 123:59 (Reißland A, Görner P)
Agglutinin, opsonizing properties of an isolated – from mussel hemolymph 149:535 (Renwrantz L, Stahmer A)
Aglais, flight and antennal flight control 145:249 (Gewecke M, Niehaus MU), 257 (Niehaus M)
Agrotis, mechanical time resolution in the ear 143:289 (Schiolten P, et al)
Air, see also wind
–, effects of emersion into – in the shore crab 132:305 (Wheatly MG, Taylor EW)
– breathing fish 122:295 (Graham JB, et al)
– current modulations, self-generated, influence on locust flight motor 150:427 (Horsmann U, et al)
– – sense organs, locust antennae as – 139:357 (Gewecke M, Heinzel H-G)
– exposure, bradycardia in *Aplysia* 122:311 (Feinstein R, et al)
– –, heart rate and respiration of crayfish during – 138:67 (Taylor EW, Wheatly MG)
– movement sensitive hairs and interneurons in locust 145:369 (Pflüger H-J, Tautz J)
– pressure, effect on bee oxygen consumption 141:433 (Withers PC)
Airborne components in insect disturbance stridulation 135:259 (Masters WM)
Airstreams, responses of cricket cercal receptors and interneurons to – 129:51 (Tobias M, Murphey RK)
Alanopine dehydrogenase in periwinkle foot muscle 149:57 (Plaxton WC, Storey KB)
Alarm substance, effect on fish central nervous excitation 123:281 (Pfeiffer W, Riegelbauer G)
Alaskozetes, temperature and metabolic rate 131:341 (Young SR)
Alcohols, acute tolerance of goldfish to – 142:61 (Hill MW, et al)
Aldehydes, effect on *Gonyaulax* glow rhythm 130:359 (Taylor W, Hastings JW)
Aldosterone, effects on frog urea cycle enzymes 134:359 (Johnston JW, Jungreis AM)
Aldrichetta, adrenergic heart innervation 147:85 (Donald J, Campbell G)
Alectoris, vasoactive properties of urotensins 126:193 (Woo NYS, Bern HA)
Alligator, absence of lingual salt glands 149:43 (Taplin LE, et al)
–, circadian organization 139:287 (Kavaliers M, Ralph CL)
–, extraretinal photoreception 136:243 (Kavaliers M)
–, peripheral circulation 148:57 (Weinheimer CJ, et al)
Alloeoplana, multimodal interneurones 147:171 (Solon MH, Koopowitz H)
Alpheus, claw closer muscles 132:97 (Stephens PJ, Mellon DeF), 109 (Mellon DeF, Stephens PJ); 134:17 (Stephens PJ, Mellon DeF)
Alticola, metabolism and thermoregulation 145:127 (Weiner J, Górecki A)
Alytes, temperature effects on auditory thresholds 130:9 (Mohneke R, Schneider H)
Ambloplites, responses of minnow to strikes by – 147:371 (Webb PW)
Amblyomma, responses of olfactory sensilla to sex pheromones 148:411 (Waladde SM)
Amblyrhynchus, oxygen consumption 132:285 (Bartholomew GA, Vleck D); 141:531 (Vleck D, et al)
Ambystoma, control of renal function in larvae 149:91 (Stiffler DF, et al)
–, hormonal effects on compass orientation 136:235 (Adler K, Taylor DH)
–, pineal body and orientation 124:357 (Taylor DH, Adler K)
–, respiration and acid-base balance 144:241 (Burggren WW, Wood SC)
Amines, biogenic, effects on bee conditioned and unconditioned responses 145:363 (Mercer AR, Menzel R)
Amino acid catabolism in gastropod hepatopancreas 129:129 (Sollock RL, et al)
– – sensitive receptors in crayfish legs 144:67 (Bauer U et al)
– – uptake and incorporation in *Tetrahymena* and HeLa cells 140:267 (Wheatley DN, Walker E)
– acids, effects on mollusc red blood cell osmoregulation 138:291 (Amende LM, Pierce SK)
– –, induction of swimming in lamprey by – 136:337 (Poon MLT)
– – in lugworm anaerobiosis 137:183 (Felbeck H)
– –, olfaction and taste in the catfish 123:357 (Caprio J)
– –, stimulatory effects in *Hydra* feeding response 144:503 (Hanai K)
Ammonia excretion of sand-shrimp during moult cycle 133:199 (Regnault M)
– – during starvation in a shrimp 141:549 (Regnault M)
– – in a seawater crab 141:457 (Kormanic GA, Cameron JN)
Ammospermophilus, annual reproductive cycle 130:131 (Kenagy GJ, Bartholomew A); 142:251 (Kenagy GJ)
–, seasonality of circadian rhythms 128:21 (Kenagy GJ)
cAMP, effects on oxygen consumption in dogfish rectal gland 136:39 (Shuttleworth TJ, Thompson JL)
–, potential role in command ability of slug buccal neuron 146:461 (Gilette R, et al)
–, role in adrenergic regulation of fish chloride secretion 145:29 (Mendelsohn SA, et al)
– stimulation of dogfish rectal gland secretion 140:209 (Shuttleworth TJ, Thompson JL)
Amphibia, acoustic responses of *Rana* anterior preoptic units 141:163 (Urano A, Gorbman A)
–, acoustic signals influence hormone production in *Rana* 140:25 (Brzoska J, Obert H-J)
–, ACTH effect on *Bufo* habituation 131:129 (Horn E, et al)
–, activity metabolism of *Bufo* 144:247 (Taigen TL, Pough FH)
–, activity metabolism in frogs and salamanders 129:309 (Hillman SS, et al)
–, background structure and prey discrimination in *Bufo* 147:179 (Ewert J-P, et al)
–, behavioral auditory masking in *Hyla* 141:13 (Ehret G, Gerhardt HC)
–, behavioral refractory period in neotropical frogs 148:337 (Narins PM)
–, blood oxygen dissociation curve of *Rana* 129:111 (Tazawa H, et al)
–, bradycardia recovering in *Rana* 133:193 (Lillo RS)

Amphibia, Ca and acidosis of *Rana* myocardium 127:307 (Gesser H, Poupa O)
–, Ca distribution and transport in *Rana* nerve 141:319 (Diecke FPJ, Stout MA)
–, cardiovascular control in *Bufo* 143:223 (Segura ET, et al)
–, cardiovascular effects of parathyroid hormone in *Rana* 147:101 (Strickland ML, et al)
–, changing of eye optical properties during metamorphosis in *Pelobates* 150:329 (Sivak JG, Warburg MR)
–, coding of auditory signals in torus semicircularis of *Rana* and *Bombina* 138:131 (Walkowiak W)
–, control of renal function in larval *Ambystoma* 149:91 (Stiffler DF, et al)
–, depth vision in *Bufo* prey localization 131:179 (Lock A, Collett T)
–, detour behavior of *Bufo* 146:261 (Collett TS)
–, direction specific neurons in *Rana* pretectum 140:53 (Katte O, Hoffmann K-P)
–, directionality of *Rana* torus semicircularis neurons 144:419 (Feng AS)
–, distribution of leucocytes in *Notophthalmus* 125:205 (Bennett MF, Reap LE)
–, effects of noise on *Eleutherodactylus* calling 147:439 (Narins PM)
–, effects of temperature on anuran auditory thresholds 130:9 (Mohneke R, Schneider H), 17 (Hubl L, Schneider H)
–, effect of temperature and pH on *Bufo* sartorius muscle 145:67 (Renaud JM, Stevens ED)
–, energetics for *Amphiuma* activity 128:139 (Preslar AJ III, Hutchison VH)
–, extraretinal photoreceptors of *Rana* 130:277 (Hartwig HG, Veen T van)
–, eye closure and retinal off-responses in *Bufo* 125:301 (Borchers H-W, Ewert J-P)
–, forward masking and suppression in *Hyla* midbrain 146:435 (Hillery CM, Fay RR)
–, frequency selectivity of *Rana* medullary neurons 143:339; 150:107 (Fuzessery ZM, Feng AS)
–, frequency selectivity in *Rana* midbrain 146:471 (Fuzessery ZM, Feng AS)
–, glossopharyngeal taste system of *Necturus* 143:143, 151 (Samanen DW, Bernard RA)
–, hormonal control of salt balance in *Desmognathus* 132:357 (Brown PS, et al)
–, hormones and compass orientation of *Ambystoma* 136:235 (Adler K, Taylor DH)
–, intrapulmonary receptors in *Rana* 132:69 (Kuhlmann WD, Fedde MR)
–, interrelations between *Rana* auditory and vestibular receptors 133:141 (Caston J, Gribenski A)
–, kidney and bladder function in *Phyllomedusa* 133:211 (Shoemaker VH, Bickler PE)
–, key stimuli of *Bufo* prey 128:189 (Borchers H-W, et al)
–, lateral line central pathways of *Xenopus* 136:203 (Plassmann W)
–, lateral line taxis in *Xenopus* 148:535 (Elepfandt A)
–, magnetic field orientation in *Eurycea* 121:273 (Philips JB)
–, masking patterns for *Hyla* auditory nerve fibers 141:1 (Ehret G, Capranica RR)
–, mating call recognition in *Hyla* 144:9, 17 (Gerhardt HC)
–, mating call selectivity in *Rana* thalamus and midbrain 150:333 (Fuzessery ZM, Feng AS)
–, mechanoreceptors in head skin of embryos 135:341 (Roberts A)
–, middle ear sensitivity in *Bufo* and *Hyla* 127:97 (Moffat AJM, Capranica RR)
–, movement direction sensitive retinal ganglion cells of *Bufo* 129:211 (Ewert J-P, et al)
–, neural correlates of *Rana* calling 126:49 (Schmidt RS)
–, neural temperature compensation in *Bufo* and *Litoria* 142:411 (Macdonald JA)
–, neuronal Gestalt prey feature analysis in *Rana* 141:139 (Schürg-Pfeiffer E, Ewert J-P)
–, organization of sensory inputs to *Rana* midbrain 142:161 (Comer C, Grobstein P)
–, oxygen and electrolytes in *Xenopus* dehydrational death 128:169 (Hillman SS)
–, phonotaxis in *Hyla* 133:247 (Rheinlaender J, et al)
–, phospholipids in *Rana* lung 139:117 (Vergara GA, Hughes GM)
–, pineal body and orientation in *Ambystoma* 124:357 (Taylor DH, Adler K)
–, pineal eye in *Xenopus* embryos and larvae 145:413 (Foster RG, Roberts A)
–, prey catching behavior of *Hydromantes* 123:261 (Roth G)
–, prey feature detectors of *Bufo* 126:43 (Ewert J-P, et al)
–, prey selection by *Bufo* 126:105 (Ewert J-P, Kehl W); 129:207 (Beck A, Ewert J-P)
–, prey-selective neurons in *Bufo* optic tectum 144:429 (Weerasuriya A, Ewert J-P)
–, reactions of *Bufo* to bombardier beetles 135:41, 51 (Dean J)
–, recognition of FM calls by *Physalaemus* 150:217 (Ryan MJ)
–, recovery from exhaustion in *Batrachoseps* 128:101 (Feder ME, Olsen LE)
–, refractive index of *Rana* nictitating membrane 125:335 (Sivak JG, et al)
–, respiration and acid-base balance in *Ambystoma* 144:241 (Burggren WW, Wood SC)
–, respiratory control in *Rana* 129:339 (Jackson DC, Braun BA)
–, responses of *Salamandra* to stationary visual patterns 124:49 (Himstedt W, et al)
–, role of CNS in control of *Bufo* water economy 146:95, 101 (Segura ET, et al)
–, salinity tolerance and osmoregulation in *Salamandra* 145:133 (Degani G)
–, tactile and visual prey capture behavior in *Rana* 142:141, 151 (Comer C, Grobstein P)
–, tectal neurons of *Bufo* 132:191 (Ewert J-P, et al)
–, tectal responses in *Salamandra* 135:251 (Himstedt W, Roth G)
–, temperature effects on *Hyla* sound communication 137:1 (Gerhardt HC, Mudry KM)
–, temperature effects on *Rana* heart 132:313 (Stene-Larsen G, Helle KB)
–, tonotopic organization of *Rana* amphibian papilla 145:437 (Lewis ER, et al)
–, training effects in *Rana* 134:345 (Cummings JW)
–, temperature insensitive blood O_2 affinity in *Chiromantis* 136:71 (Johansen K, et al)
–, two-note call of *Eleutherodactylus* 127:1 (Narins PM, Capranica RR)
–, urea production in *Rana* 134:359 (Johnston JW, Jungreis AM)
–, variability of response in *Bufo* orientation 144:45 (Adler K, Taylor DH)
–, vestibular nerve responses to auditory inputs in *Rana* 147:305 (Bricout-Berthout A, Caston J)
–, vestibular receptor innervation in *Rana* 133:63 (Caston J, Gribenski A)
–, visual acuity of *Triturus* 128:359 (Manteuffel G, Himstedt W)
–, visual neurons sensitive to moving stimuli in *Bufo* 126:35 (Wietersheim A v, Ewert J-P)
Amphibian papilla, tonotopic organization of bullfrog – 145:437 (Lewis ER, et al)
Amphibolorus, colour changes and thermoregulation 135:139 (Rice GE, Bradshaw SD)
Amphipoda, see also *Hyperia*, *Synchelidium*
–, optics of the eyes of deep-sea – 145:209 (Land MF)
Amphiuma, energetics for activity 128:139 (Preslar AJ III, Hutchison VH)
Ampullae of Lorenzini in the magnetic field 126:333 (Brown HR, Ilyinsky OB)
– –, ionic composition of catfish – 126:115 (Okitsu S, et al)
Ampullary electroreceptors in the sturgeon 138:213 (Teeter JH, et al)
– – in a fresh water ray 138:225 (Szamier RB, Bennett MVL)
α-amylases from spiders 127:355 (Mommsen TP)
Anaerobic CO_2 production in goldfish 149:75 (Thillart G van den, Verbeek R)
– energy metabolism of the eel 149:469 (Waarde A van, et al)
– potential of vertebrate muscle 143:191 (Castellini MA, Somero GN)
Anaerobiosis, amino acids in lugworm – 137:183 (Felbeck H)
–, lugworm recovery from 133:227 (Pörtner H-O et al)
– in *Nereis* 125:185 (Schöttler U)
Anaesthetics temperature, effect on goldfish behavior 135:327 (Hill MW, et al)

Anas, see also Pekin duck
–, cardiovascular changes to CNS-stimulation 147:71 (Bech C, et al)
–, control of breathing during exercise 147:107 (Kiley JP, et al)
–, cranial osmoreception in salt gland control 149:451 (Hammel HT, et al)
–, nictitating membrane 125:335 (Sivak JG, et al)
–, osmotic and volume control of diuresis 146:17 (Simon-Oppermann C, Simon E)
–, salt gland blood flow in salt-water adapted – 149:457 (Kaul R, et al)
Anax, movement detectors in ventral nerve cord 141:327 (Olberg RM)
–, neurons of median ocellus 139:25 (Patterson JA, Chappell RL)
–, parallel encoding by interneurons 142:27 (Olberg RM)
–, pigment migration in the ocelli 129:199 (Stavenga DG, et al)
Ancylus, protein, lipid and carbohydrate content during starvation 123:149 (Streit B)
Androctonus, arhabdomeric cells in median eye 130:265 (Schliwa M, Fleissner G)
–, hemocyanin subunits 130:283 (Markl J, et al)
Aneides, activity metabolism 129:309 (Hillman SS et al)
Anguilla, acid-base regulation in blood plasma 140:249 (Thomas S, et al)
–, adrenergic heart innervation 147:85 (Donald J, Campbell G)
–, anaerobic energy metabolism 149:469 (Waarde A van, et al)
–, catecholamine effects on ventilation 129:343 (Peyraud-Waitzenegger M)
–, ChAT activity in swimbladder 146:57 (Fänge R, Holmgren S)
–, chloride permeability of intestine 145:73 (Ando M)
–, extraretinal photoreceptors 130:277 (Hartwig HG, Veen T van)
–, gluconeogenesis in liver cells 132:343 (Hayashi S, Ooshiro Z); 135:115, 127 (Renaud JM, Moon TW)
–, ion and water transport in intestine 138:87 (Ando M)
–, inotropic effects of adrenaline on myocardium 147:123 (Gesser H, et al)
–, peripheral olfactory responses 148:379 (Silver WL)
–, seasonal changes of catecholamine effects 138:367 (Peyraud-Weitzenegger M, et al)
–, water exchanges in the gills 124:137 (Isaia J, Isaia A)
Angular sensitivity of bee's specialized photoreceptors 141:19 (Labhart T)
Anisomycin, effects on flagellate circadian oscillator 148:11 (Taylor W, et al)
Anisops, hemoglobin and gas bubble function 142:515 (Wells RMG, et al)
Annelida, afferent pathways to giant interneurons in *Lumbricus* 140:351 (Smith PH, Mittenthal JE)
–, amino acids in *Arenicola* anaerobiosis 137:183 (Felbeck H)
–, anaerobic energy metabolism in *Tubifex* 130:337 (Hoffmann KH, et al)
–, anaerobic metabolism of *Nereis* 125:185 (Schöttler U)
–, bioluminescence of *Hesperonoe* 129:67 (Herrera AA)
–, calcium depletion depolarizations in leech Retzius cell membrane 150:499 (Yang J, Lent CM)
–, energy production in *Arenicola* 149:547 (Schöttler U, et al)
–, excitation, inhibition and modulation in *Hirudo* muscle 146:527 (Mason A, Kristan WB Jr)
–, gluconeogenesis in *Arenicola* and *Tubifex* 149:477 (Mustafa T, et al)
–, heartbeat control in *Hirudo* 122:111 (Calabrese RL)
–, Leydig cells of *Macrobdella* 146:379 (Keyser KT, et al)
–, nervous system of *Haementeria* 144:435 (Kramer AP, Goldman JR), 449 (Kramer AP)
–, neural control of *Hirudo* cord shortening 124:339 (Magni F, Pellegrino M)
–, neural temperature compensation in *Lumbricus* 142:411 (Macdonald JA)
–, neuromuscular transmission in *Hirudo* 124:333 (Kuffler DP)
–, phosphagens in *Tubifex* 143:237 (Hoffmann KH)
–, properties of erythrocruorins of *Marphysa* and *Diopatra* 123:177 (Weber RE, et al)
–, propionate formation in *Arenicola* 138:35 (Schroff G, Zebe E)
–, recovery from anaerobiosis of *Arenicola* 133:227 (Pörtner H-O, et al)
–, responses of *Hirudo* to water waves 144:111 (Young SR, et al)
–, synaptic basis of *Hirudo* swim initiation 148:253, 265 (Weeks JC)
–, urine formation during diuresis in *Hirudo* 146:75 (Zerbst-Boroffka I, et al)
–, ventilation and oxygen uptake in three species of *Nereis* 145:45 (Kristensen E)
–, volume control in *Hirudo* 127:343 (Zerbst-Boroffka I)
–, water and salt excretion in *Hirudo* 139:97 (Wenning A, et al)
Annual activity, photoperiodic control of snail – 142:89 (Bailey SER)
– rhythms, endogenous, control in chipmunks 141:369 (Kenagy GJ)
Anolis, photoperiodic control of reproduction 146:485 (Underwood H, Hall D)
–, photoperiodic time measurement 125:143 (Underwood H)
Anoptichthys, detection of stationary objects 143:369 (Campenhausen C v., et al), 375 (Weissert R, Campenhausen C v)
Anosmatic pigeons, orientation 135:227 (Papi F et al); 150:493 (Meschini E)
Anoxia, effect of action potentials in crayfish muscle fibers 125:327 (Moody W Jr)
–, effect on phosphorylated compounds and glycogen in goldfish 136:45 (Thillart G van den, et al)
–, effects on NAD/NADH ratios in goldfish muscle and liver 146:41 (Thillart G van den, et al)
–, effects on transaminase reactions and ammonia and succinate levels in goldfish 147:53 (Waarde A van, et al)
–, responses of *Helix* to – 141:503 (Wieser W)
Ant, see *Atta, Camponotus, Cataglyphis, Formica, Myrmecia*
Antarctic poikilotherms, temperature compensation in peripheral nerves 142:411 (Macdonald JA)
Antennal afferences, effects on cricket head position 150:93 (Horn E, Bischof H-J)
– flight control in a butterfly 145:249 (Gewecke M, Niehaus M), 257 (Niehaus M)
– gland function in *Callinectes* 123:143 (Cameron JN, Batterton CV)
– proprioception in rock lobster 145:505 (Rossi-Durand C, Vedel JP)
– reflex movements in lobster 147:259 (Neil DM, et al), 269 (Barnes WJP, Neil DM)
– – in visual conditioning of fixed bees 135:217 (Erber J, Schildberger K)
– thermoreceptors in cave beetle 143:443 (Loftus R, Corbière-Tichané G)
– tracking of moving targets in crickets 142:419 (Honegger H-W)
Antheraea, pheromone sensitive neurons in deutocerebrum 132:235 (Boeckh J, Boeckh V)
Anthia, circadian clock 149:311 (Fleissner G)
Antidiuretic effects of fish urophysis in rats 135:183 (Ichikawa T)
Antimora, pressure adaptation of lactate dehydrogenase 129:295 (Siebenaller JF, Somero GN)
Anti-sun orientation of bees 134:151 (Edrich W, et al)
Antlion, pigment migration in superposition eye 143:491 (Dreisig H)
Antrozous, development of hearing 126:169 (Brown PE, et al)
Anurogryllus, arboreal singing 132:217 (Paul RC, Walker TJ)
–, energetics of singing 143:199 (Prestwich KN, Walker TJ)
Apis, achromatic vision 141:389 (Menzel R)
–, chromatic adaptation 144:543 (Neumeyer C)
–, colonial thermoregulation 148:65 (Kronenberg F, Heller HC)
–, color discrimination 141:379 (Rose R, Menzel R)
–, color opponent neurons 142:81 (Riehle A)
–, biogenic amines in conditioned responses 145:363 (Mercer AR, Menzel R)
–, cuticular sclerotization 145:17 (Andersen SO, et al)
–, daily release of neurosecretory material in the brain 126:327 (Heinzeller T, Vogel H)
–, development of cuticle 126:257 (Thompson PR, Hepburn HR)
–, distance messages in the dances 123:339 (Esch H)

Apis, *e*-vector orientation 125:1 (Rossel S, et al)
–, effect of earth's magnetic field on gravity orientation 122:145 (Martin H, Lindauer M)
–, effects of ambient air pressure on oxygen consumption 141:433 (Withers PC)
–, fields of view 143:17 (Seidl R, Kaiser W)
–, glycogen turnover in drone retina 150:69 (Evêquoz V, et al)
–, horizontal movement detectors 147:155 (DeVoe RD, et al)
–, intracellular optical physiology of the eye 137:193 (Bernard GD, Wehner R), 205 (Wehner R, Bernard GD)
–, longevity, flight performance and energy turnover 146:35 (Neukirch A)
–, juvenile hormone and larval gravity orientation 137:7 (Ebert R)
–, magnetic fields and sound communication 132:11 (Kilbert K)
–, movement learning of flying – 146:273 (Erber J)
–, no twist of rhabdomeres 134:109; 137:281 (Ribi WA)
–, orientation to colour patterns 139:225 (Glas HW van der)
–, orientation of comb building 147:495 (Jong D De)
–, orientation to ultraviolet light 134:151 (Edrich W, et al)
–, photoreceptors in orientation behavior 133:111 (Edrich W)
–, polarized light detection in non twisting rhabdomeres 137:281 (Ribi WA)
–, potentials in ocellar interneurons 143:427 (Milde J)
–, properties of medulla and lobula interneurons 137:215 (Hertel H)
–, role of dorsal frontal part of drone eye 136:263 (Praagh JP van, et al)
–, round dance and profitability 148:297 (Waddington KD)
–, simultaneous color contrast 139:165 (Neumeyer C)
–, specialized photoreceptors in compound eye 141:19 (Labhart T)
–, spectral light deprivation and spectral sensitivity 147:365 (Hertel H)
–, spectral sensitivity of behavioural patterns 122:27 (Kaiser W, et al)
–, transplantation of a time-signal 124:193 (Martin U, et al)
–, twist of rhabdomeres 142:1 (Wehner R, Meyer E)
–, visual conditioning 135:217 (Erber J, Schildberger K)
–, visual interneurones in the brain 134:253 (Guy RG, et al)
–, visual interneurons in the median protocerebrum 121:65 (Erber J, Menzel R)
–, visual scanning 130:173 (Anderson AM)
Aplocheilus, prey localization 140:163 (Bleckmann H); 143:485 (Bleckmann H, et al); 145:331 (Bleckmann H, Schwartz E); 149:399 (Müller U, Schwartz E)
Aplysia, abnormal axonal discharges 132:127 (Gola M, Ducreux C)
–, adaptive changes in heart rate 123:11 (Dieringer N, et al)
–, atrial gland and egg-laying 128:67; 141:131 (Arch S, et al)
–, axonal paroxysmal depolarisation 134:29 (Ducreux C, Gola M)
–, bradycardia 122:311 (Feinstein R, et al)
–, circadian organization 131:169 (Lickey ME, Wozniak JA)
–, food arousal and biting 123:31 (Susswein AJ, et al)
–, function of statocyst sensory cells 150:359 (Janse C)
–, light sensitivity of rhinophores and eyes 136:257 (Jacklet JW)
–, neuronal gill control 139:17 (Dickinson PS)
–, role of bag cells in egg deposition 147:523, 537 (Cobbs JS, Pinsker HM)
–, time sharing of heart power 149:31 (Koch UT, Koester J)
Apteronotus, electrolocation 144:465, 481 (Bastian J)
–, EOD field 135:283 (Hoshimiya N, et al)
–, vision and electroreception 147:287 (Bastian J)
Aracana, adrenergic heart innervation 147:85 (Donald J, Campbell G)
Arachnida, see also Acari, Araneae, Pedipalpi, Scorpiones
–, transepithelial voltages across sensory epithelia 134:119 (Thurm U, Wessel G)
Araneae, acid-base status in *Eurypelma* hemolymph 134:331 (Loewe R, Brauer de Eggert H)
–, cerebral photosensitive neurons in *Argiope* 150:467 (Yamashita S, Tateda H)
–, digestive α-amylases of *Tegenaria* and *Cupiennius* 127:355 (Mommsen TP)
–, efferent control in *Argiope* eyes 143:477 (Yamashita S, Tateda H)
–, hemocyanin of *Cupiennius* 140:199 (Markl J)
–, iron metabolism in *Dugesiella* 127:349 (Lee MY, et al)
–, lyriform slit sense organ of *Cupiennius* 125:37 (Barth FG, Bohnenberger J), 45 (Seyfarth E-A); 142:391 (Bohnenberger J); 147:423 (Seyfarth E-A, et al); 148:175 (Barth FG, Geethabali)
–, moulting in *Dugesiella* 149:121 (Stewart DM, Martin AW)
–, movement detection in *Evarcha* eyes 124:15 (Duelli P)
–, oxygen binding of *Eurypelma* hemocyanin 128:161 (Loewe R)
–, oxygen transport in *Eurypelma* blood 123:113 (Angersbach D)
–, photoreceptor sensitivity in *Dinopis* 141:53 (Laughlin S, et al)
–, subzero temperature tolerance in *Philodromus* and *Clubiona* 137:347 (Duman JG)
–, subunit heterogeneity of hemocyanins 130:283 (Markl J, et al)
–, tiered receptors in *Plexippus* eyes 145:227 (Blest AD, et al)
–, trichobothria in orb-weaving spiders 123:59 (Reißland A, Görner P), 71 (Reißland A)
–, vibration receptors in *Cupiennius* 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
–, web vibrations and prey capture in *Zygiella* and *Nephila* 148:445 (Klärner D, Barth FG)
Archidoris, neurons controlling gill movements 131:277 (Dickinson PS)
Archilochus, color discrimination 130:209 (Goldsmith TH, Goldsmith KM)
–, wavelength discrimination 143:103 (Goldsmith TH, et al)
Arenicola, amino acids in anaerobiosis 137:183 (Felbeck H)
–, energy production 149:547 (Schöttler U, et al)
–, gluconeogenesis 149:477 (Mustafa T, et al)
–, propionate formation 138:35 (Schroff G, Zebe E)
–, recovery from anaerobiosis 133:227 (Pörtner H-O, et al)
Arenivaga, gravity orientation information 142:359 (Walthall WW, Hartman HB)
Arginase in a lizard 140:261 (Baby TG, Reddy SRR)
Arginine, effect on memory consolidation in a praying mantis 147:231 (D'Alessio G, et al)
– metabolism in purinotelic animals 140:261 (Baby TG, Reddy SRR)
– phosphate, effect on *Sepia* glycolytic enzymes 142:501 (Storey KB)
Ariolimax, control of food intake 124:37 (Senseman, DM)
Argiope, cerebral photosensitive neurons 150:467 (Yamashita S, Tateda H)
–, efferent control in the eyes 143:477 (Yamashita S, Tateda H)
Arius, structure and function of ear 144:27 (Popper AN, Tavolga WN)
Artemia, light-dark adaptation in the eye 143:389 (Nilsson D-E, Odselius R)
Arthropoda, see Arachnida, Chelicerata, Crustacea, Insecta
Ascalaphus, ion gradient and photoreceptor sensitivity 125:237 (Hamdorf K, et al)
Ascaris, gluconeogenesis 149:477 (Mustafa T, et al)
Asellia, echolocation 131:161 (Gustafson Y, Schnitzler HU)
Aspartate, transmitter at insect neuromuscular junctions 135:299 (Irving SN, Miller TA)
Association-dissociation equilibrium in shrimp hemocyanin 143:261 (Miller KI, Van Holde KE)
Astacus, acid-base balance of hemolymph 149:463 (Dejours P, Armand J)
–, coagulation 142:473 (Ghidalia W, et al)
–, eye optical system 135:1 (Vogt K)
–, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, oxygen transport in blood 123:105 (Angersbach D, Decker H)
–, sinus gland hormones 122:359 (Keller R)
–, temperature effects on stretch receptor 133:257 (Moser H, et al)

Astacus, ventilatory reflex response to hyperoxia 140:193 (Massabuau J-C, et al)
–, water vibration receptor 144:533 (Tautz J, et al); 149:409 (Masters WM, et al)
Asterias, pyloric caeca composition during reproduction 148:49 (Plas AJ van der, Voogt PA)
–, steroid synthesizing capacity 138:27 (Schoenmakers HJN)
Astroorientation in *Lethrus* 121:253 (Frantsevich L, et al)
Athene, ventilatory responses to hypercarbia and hypoxia 149:527 (Boggs DF, Kilgore DL Jr)
Atopomycterus, adrenergic innervation of heart 147:85 (Donald J, Campbell G)
ATP, response in trout systemic vasculature 122:325 (Wood CM)
–, role in volume regulation of mollusc red blood cells 138:291 (Amende LM, Pierce SK)
ATPases, effect of light on – in fly eyes and brain 123:245 (Rivera MF, Langer H)
–, potassium sensitive, in fly labellum 148:303 (Wieczorek H)
Atrial adrenoceptors in trout 139:109 (Ask JA, et al)
– gland, effect on egg-laying in *Aplysia* 128:67 (Arch S, et al); 141:131 (Arch S, et al)
Atta, body vibration and sound production 150:239 (Masters WM, et al)
Attacus, haemolymph circulation and tracheal ventilation 145:1; 147:27 (Wasserthal LT)
Audiogram, behavioral, of *Rousettus* 136:227 (Suthers RA, Summers CA)
Auditory behavior of the cricket 141:215 (Weber T, et al); 146:361 (Thorson J, et al)
– evoked potentials in manatee 148:547 (Bullock TH, et al)
– fibre activity in the gecko 142:203 (Eatock RA et al), 219 (Eatock RA, Manley GA)
– fibers, primary, response properties in a cricket 143:129 (Hutchings M, Lewis B)
– function in Tettigoniidae 142:169 (Hill KG, Oldfield BP)
– giant neuron in bush cricket ventral cord 132:225 (Kalmring K, et al)
– interneurons, cricket 121:1 (Casaday GB, Hoy RR); 127:11 (Wohlers DW, Huber F); 146:351 (Popov AV, Markovich AM)
– nerve fibers, masking patterns and filter characteristics of tree-frog – 141:1 (Ehret G, Capranica RR)
– neurons in bat superior olivary complex 128:47 (Jen PH-S)
– – in cricket brain 140:81 (Boyan GS)
– – in cricket prothoracic ganglion 126:183 (Popov AV, et al)
– – in domestic fowl midbrain 134:241 (Coles RB, Aitkin LM)
– –, processing of sound signals in cricket – 146:161 (Wohlers DW, Huber F)
– –, primary, in crickets 137:27 (Esch H, et al)
– neurophysiology of bat inferior colliculus 131:137 (Vater M, et al); 147 (Vater M, Schlegel P)
– pathway in locust ventral cord 126:25 (Kalmring K, et al)
– physiology, peripheral, in a shark 142:379 (Corwin JT)
– processing in locust metathoracic ganglion 144:305 (Römer H, et al)
– receptors, physiological characteristics of weta – 141:39 (Hill KG)
– –, tonotopic organisation of tettigoniid – 147:461 (Oldfield BP)
– sensitivity of a moth 129:79 (Fullard JH)
– signal detection in damselfish 140:135 (Myrberg AA Jr, Pires JY)
– signals, coding in anuran torus semicircularis 138:131 (Walkowiak W)
– stimulation, effects on frog efferent vestibular system 147:305 (Bricout-Berthout A, Caston J)
– system, analysis of cricket – using a closed sound field 141:283 (Kleindienst H-U, et al)
– –, functional development in a cricket 127:131 (Ball EE, Hill KG)
– –, interrelations with vestibular system in frog labyrinth 133:141 (Caston J, Gribenski A)
– –, physiological and biophysical properties of weta – 141:31 (Field LH, et al)
– –, sensitivity to frequency and sound direction in cricket 121:79 (Hill KG, Boyan GS)
– –, peripheral, specialisations in bat – 131:255 (Pollak G, et al)
– temporal discrimination by the goldfish 147:201 (Fay RR)
– thresholds of *Rousettus* 136:227 (Suthers RA, Summers CA)
– –, temperature effects on anuran – 130:9 (Mohneke R, Schneider H), 17 (Hubl L, Schneider H)
Austracris, functional organisation of ocelli 124:297 (Wilson M)
Austropotamobius, heart rate and respiration in normoxic water and air 138:67 (Taylor EW, Wheatly MG)
Autotomy, limb – and role of cuticular stress detector in the crab 125:79 (Findlay I)
Aves, accommodation in bird eyes 137:267 (Levy B, Sivak JG)
–, active space of *Agelaius* song 147:511 (Brenowitz EA)
–, adaptations of *Pygoscelis* during swimming under water 137:17 (Nachtigall W, Bilo D)
–, amplitude modulation thresholds for *Melopsittacus* 143:383 (Dooling RJ, Searcy MH)
–, arterial chemoreceptors and respiration in Pekin ducks 133:177 (Bouverot P, et al)
–, auditory midbrain responses in *Gallus* 134:241 (Coles RB, Aitkin LM)
–, body-to-brain temperature difference in pigeons 129:119 (Kilgore DL, et al)
–, brain temperature in pigeons 129:115 (Bernstein MH, et al)
–, brain temperature in *Poephila* 145:89 (Bech C, Midtgård U)
–, caecal function in fowl 147:61 (Rice GE, Skadhauge E)
–, cardiovascular changes to CNS-stimulation in *Anas* 147:71 (Bech C, et al)
–, catabolic enzymes in *Dumetella* pectoralis muscle 141:417 (Marsh RL)
–, circadian periodicity in *Emberiza* 144:201 (Tewary PD, Kumar V)
–, circannual rhythms in *Sturnus* 146:419 (Gwinner E, Wozniak J)
–, cold defense responses of pigeons during sleep and wakefulness 136:77 (Hohtola E, et al)
–, colonic and coprodeal function in domestic fowl 146:51; 147:65 (Rice GE, Skadhauge E)
–, color discrimination by *Archilochus* 130:209 (Goldsmith TH, Goldsmith KM)
–, control of breathing during exercise in *Anas* 147:107 (Kiley JP, et al)
–, cranial osmoreception in *Anas* salt gland control 149:451 (Hammel HT, et al)
–, critical bands in *Melopsittacus* 125:359 (Saunders JC, et al)
–, development of heat production in *Riparia* 149:99 (Marsh RL, Wickler SJ)
–, development of phosphorylase activity in chicken pectoral muscle 141:439 (Wittenberger C, Coprean D)
–, echolocating click production by *Collocalia* 148:457 (Suthers RA, Hector DH)
–, effects of pinealectomy on circadian rhythms in *Sturnus* 126:123 (Gwinner E)
–, energy metabolism in *Lichmera* 137:157 (Collins BG, et al)
–, entrainment of *Passer* circadian system 146:245 (Takahashi JS, Menaker M)
–, extraretinal photoreception in *Passer* and *Columba* 130:277 (Hartwig HG, Veen T van)
–, flight parameters in *Carduelis* 127:123 (Woike M, Gewecke M)
–, formal properties of circadian rhythms in *Coturnix* 145:381, 391 (Simpson SM, Follett BK)
–, functional organization of *Numida* auditory neostriatum 132:243 (Bonke D, et al); 257 (Scheich H, et al)
–, infrasound detection by homing pigeon 129:1 (Kreithen ML, Quine DB)
–, interaural pathway in *Tyto* 144:299 (Moiseff A, Konishi M)
–, K_m of NADH for M_4-LDH of turkey 137:115 (Greaney GS, Somero GN)
–, lung compliance in *Columba* and *Passer* 138:321 (Perry SF, Duncker H-R)
–, melatonin and *Sturnus* circadian rhythm 127:209 (Gwinner E, Benzinger I)
–, membrane lipids of developing chick heart 125:151 (Kutchai H, et al)

Aves, microspectrophotometry of *Dromiceius* and *Nothoprocta* photoreceptors 144:271 (Sillman AJ, et al)
–, middle ear function in *Sturnus* and *Strix* 150:61 (Oeckinghaus H, Schwartzkopff J)
–, migratory direction changes in *Sylvia* 125:267 (Gwinner E, Wiltschko W)
–, N-acetyltransferase in chick retina 139:103; 140:181 (Binkley S, et al)
–, navigation of pigeons 128:285 (Ioalé P, et al), 297 (Waldvogel JA, et al), 303 (Papi F, et al); 135:227 (Papi F, et al); 139:193, 209 (Wallraff HG); 203 (Wallraff HG, et al); 143:411 (Wallraff HG); 150:493 (Meschini E)
–, neural control of chick hatching 145:497 (Bekoff A, Kauer JA)
–, norepinephrine turnover in cold exposed *Carduelis* 146:137 (Koban M, Feist DD)
–, olfactory pathway of pigeon 137:39 (Madacar AW, et al)
–, optics and vision in *Strix* 145:341 (Martin GR)
–, oral responses from chicken solitary complex 130:259 (Gentle MJ)
–, orientation during and after migratory period in *Passerina* 137:47 (Wiltschko W, et al)
–, osmotic and volume control of diuresis in *Anas* 146:17 (Simon-Oppermann C, Simon E)
–, pineal gland and *Passer* activity rhythm 134:339 (Laitman RS, Turek FW)
–, pineal and hypothalamic pacemakers in *Coturnix* 144:381 (Simpson SM, Follett BK)
–, pinealectomy and circannual testicular rhythm in *Sturnus* 136:345 (Gwinner E, Dittami J)
–, refractive index of nictitating membrane 125:335 (Sivak JG, et al)
–, respiration in *Bolborhynchus* 142:479 (Bucher TL)
–, respiratory evaporation in panting *Gallus* 145:63 (Brackenbury J, et al)
–, reversal of hypoglossal dominance in canaries 134:227 (Nottebohm F, et al)
–, role of crop milk feeding in pigeon 135:97 (Vandeputte-Poma J)
–, role of pineal organ and SCN in *Padda* circadian rhythms 141:207 (Ebihara S, Kawamura H)
–, salt gland blood flow in salt water-adapted *Anas* 149:457 (Kaul R, et al)
–, salt gland control in Pekin ducks 129:301 (Deutsch H, et al)
–, seasonal acclimatization to temperature in *Carduelis* 125:101 (Carey C, et al)
–, seasonal acclimatization in *Cygnus* 136:61 (Bech C)
–, seasonal changes in *Zonotrichia* blood composition 129:151 (deGraw WA, et al)
–, seasonal variability in *Gallus* endotoxemia 134:287 (Merrill GF, et al)
–, self-sustaining circadian rhythms in finches. 139:49; 140:113 (Wever RA)
–, single cells in *Agelaius* auditory nuclei 126:347 (Sachs MB, Sinnott JM)
–, sound localization by *Tyto* 133:1 (Knudsen EI, et al), 13 (Knudsen EI, Konishi M)
–, sound transmission through chicken interaural pathways 136:183 (Rosowski JJ, Saunders JC)
–, syrinx innervation in *Padda* 129:281 (Seller TJ)
–, temperature regulation during exercise in *Coturnix* 149:519 (Nomoto S, et al)
–, temperature sensitive receptors in pigeon feathered skin 135:201 (Necker R, Reiner B)
–, thermal effects on pigeon spinal motoneurons 139:251 (Görke K)
–, thermoregulation in *Eudyptula* 148:93 (Stahel CD, Nicol SC)
–, thermoregulation in the pigeon 126:151 (Rosner G), 211 (Walsberg GE, et al); 127:75 (Schmidt I); 133:151 (Schmidt I, Simon E); 144:375 (Sieland M, et al); 146:201 (Schmidt I)
–, use of infrasounds by homing pigeons 141:153 (Quine DB, Kreithen ML)
–, vasoactive properties of urotensins in columbiform and galliform birds 126:193 (Woo, NYS, Bern HA)
–, ventilatory responses to hypercarbia and hypoxia in *Athene* and *Colinus* 149:527 (Boggs DF, Kilgore DL Jr)
–, wavelength discrimination in *Archilochus* 143:103 (Goldsmith TH, et al)
–, wavelength discrimination in pigeon 141:47 (Emmerton J, Delius JD)
Avoidance, jamming –, see Jamming Avoidance
–, osmotic, in nematodes 137:93 (Dusenbery DB)
– behavior of green lacewings 131:113 (Miller LA, Olesen J), 121 (Olesen J, Miller LA)
– maneuvers, orientation signals of bats during – 148:389 (Jen PHS, Kamada T)
– response of minnow to strikes of predators 147:371 (Webb PW)

B

Backswimmer, see *Anisops, Notonecta*
Bag cells, role in gastropod egg deposition 147:523, 537 (Cobbs JS, Pinsker HM)
Balance-organs, fluid-filled, role in *Scylla* compensatory eye reflex 130:95 (Janse C, Sandeman DC)
Balanus, proprioceptors in the cirri 123:229 (Clark JV, Dorsett DA)
–, rhythmic pumping 130:183 (Clark JV)
Barathra, acoustical response of hair receptors 127:185 (Fletcher NH)
–, vibration reception of caterpillar thoracal hairs 125:67 (Tautz J)
Barnacle, see *Balanus*
Bat, see *Antrozous, Asellia, Desmodus, Eptesicus, Hipposiderus, Miniopterus, Molossus, Myotis, Nyctalus, Pipistrellus, Plecotus, Rhinolophus, Rhinopoma, Rousettus, Tadarida, Taphozous, Trachops*
– sound detection by moths 143:363 (Fullard JH, Thomas DW)
Bathimaster, electric field 141:277 (Butsuk SV, Bessonov BI)
Batrachoseps, activity metabolism 129:309 (Hillman SS, et al)
–, recovery from exhaustion 128:101 (Feder ME, Olsen LE)
Bats, acoustic imaging in sonar 135:61 (Simmons JA, Stein RA)
–, effect of moth hearing on echolocation strategies 132:77 (Fenton MB, Fullard JH)
Beetle, see Coleoptera
Behavior, active phase coupling in electric fish 128:235 (Langner G, Scheich H)
–, active space of blackbird song 147:511 (Brenowitz EA)
–, acute tolerance of goldfish to alcohols 142:61 (Hill MW et al)
–, amplitude modulation thresholds for the parakeet 143:383 (Dooling RJ, Searcy MH)
–, arboreal singing of a burrowing cricket 132:217 (Paul RC, Walker TJ)
–, associative learning in a terrestrial mollusc 144:1 (Sahley C, et al)
–, avoidance conditioning in a gastropod mollusc 138:157 (Davis WJ, et al)
–, communicative significance of treefrog call 127:1 (Narins PM, Capranica RR)
–, computation of interception courses in hoverflies 125:191 (Collett TS, Land MF)
–, configurational prey selection by individual experience in toads 126:105 (Ewert J-P, Kehl W)
–, control of food-intake by a slug 124:37 (Senseman DM)
–, detection of objects in a blind cave fish 143:369 (Campenhausen C v, et al)
–, development of frog calling 126:49 (Schmidt RS)
–, discrimination between stationary objects in a blind cave fish 143:375 (Weissert R, Campenhausen C v)
–, effect of anaesthetics temperature on goldfish – 135:327 (Hill MW et al)
–, effect of arginine on memory consolidation in a praying mantis 147:231 (D'Alessio G, et al)
–, effects of biogenic amines on bee conditioned and unconditioned responses to olfactory stimuli 145:363 (Mercer AR, Menzel R)
–, effects of cold on mouse activity 123:91 (Barnett SA, et al)
–, effects of food arousal on biting in *Aplysia* 123:31 (Susswein AJ, et al)
–, effects of masking noise on treefrog calling 147:439 (Narins PM)
–, emergence and development of EOD in a mormyrid fish 127:45 (Westby GWM, Kirschbaum F)

Behavior, EOD pacemaker control in gymnotiform electric fish 141:197 (Baker CL Jr)
–, fast start responses in goldfish following Mauthner cell lesions 145:485 (Eaton RC, et al)
–, foraging profitability and round dance correlates in honey bees 148:297 (Waddington KD)
–, gill cleaning, ventilation and swimming in *Limulus* 141:67, 77 (Watson III WH), 87 (Wyse GA et al)
–, head grooming after foreleg amputation in a mantis 125:253 (Zack S)
–, internal dynamics and interrelation of fish schools 144:313 (Partridge BL)
–, jamming avoidance response in *Eigenmannia* 127:267 (Heiligenberg W, et al); 136:113 (Heiligenberg W, Bastian J), 135 (Bastian J, Heiligenberg W)
–, jaming avoidance response of gymnotoids 124:211 (Heiligenberg W, et al); 136:165 (Baker CL Jr)
–, key stimuli of toad prey 128:189 (Borchers H-W, et al)
–, mating call recognition in treefrogs 144:9, 17 (Gerhardt HC)
–, Mauthner cell initiated fast start in zebrafish larvae 140:343 (Kimmel CB, et al)
–, movement learning of flying bees 146:273 (Erber J)
–, neural correlates of *Tritonia* – 141:111 (Audesirk G, Audesirk T)
–, olfactory learning in a *Drosophila* mutant 130:271 (Dudai Y)
–, opiate effects on mantis shrimp defensive response 147:455 (Maldonado H, Miralto A)
–, pharmacological effects on lobster motor pattern output 139:1 (Young RE, et al)
–, pheromone production in *Danaus* 126:97 (Boppré M, et al)
–, predator avoidance response in fathead minnow 147:371 (Webb PW)
–, prey capture in frogs 142:141, 151 (Comer C, Grobstein P)
–, prey catching of salamander 123:261 (Roth G); 124:49 (Himstedt W, et al)
–, prey selection in response to moving configurational stimuli by toads 129:207 (Beck A, Ewert J-P)
–, protective reflex of a bryozoan 137:297 (Wiese K, et al)
–, reactions of toads to bombardier beetles 135:41, 51 (Dean J)
–, reciprocal inhibition between feeding and withdrawal in *Pleurobranchaea* 139:77 (Kovac MP, Davis WJ)
–, recovery from lesions in escape system of cockroach 146:291 (Vardi N, Camhi JM)
–, responses of frog eating bat to sonic frequencies 150:413 (Ryan MJ, et al)
–, responses of leech to water waves 144:111 (Young SR, et al)
–, responses of mormyrid fish to complex impedances 145:459 (Meyer JH)
–, responses of a nematode to chemical stimuli 136:327, 333 (Dusenbery DB)
–, role of bag cells in gastropod egg deposition 147:523, 537 (Cobbs JS,, Pinsker HM)
–, role of glutathione receptor in *Hydra* feeding 137:73 (Hirakawa Y, Kijima H)
–, role of N. mesencephali exterolateralis in mormyrid electrocommunication 144:327 (Moller P, Szabo T)
–, role of stretch reception in butterfly bursa copulatrix 130:191 (Sugawara T)
–, route planning in toads 146:261 (Collett TS)
–, sound communication in honeybees 132:11 (Kilbert K)
–, structure of the stridulation of *Orchelimum* 126:343 (Nielsen ET)
–, temperature effects on treefrog sound communication 137:1 (Gerhardt HC, Mudry KM)
–, ventilation during prey capture in dragonfly larvae 128:341 (Weber T, Caillière L)
–, visual conditioning of fixed bees 135:217 (Erber J, Schildberger K)
–, web vibrations and prey capture in spiders 148:445 (Klärner D, Barth FG)
–, acoustic, of bats 142:67 (Miller LA, Degn HJ)
–, auditory, of the cricket 141:215 (Weber T, et al); 146:361 (Thorson J, et al)
–, escape –, see escape behavior
–, feeding –, see feeding behavior
–, free flight –, of male bibionid flies 150:395 (Zeil J)
–, homologous, interspecific differences in crayfish – 145:471 (Yoshino M, et al)
–, oculomotor, in fishes 128:241 (Graf W, Meyer DL)
–, reflex-evoked, neural pathways and command systems in crayfish 143:27 (Williams BJ, Larimer JL)
–, searching – of desert ants 142:315 (Wehner R, Srinivasan MV)
–, wavelength specific, in a butterfly 149:325 (Kolb G, Scherer C)
–, – –, of a whitefly 144:83 (Coombe PE)
Behavioral auditory masking in treefrogs 141:13 (Ehret G, Gerhardt HC)
– changes in rats by exposure to an odor 124:259 (Laing DG, Panhuber H)
– refractory period in calling treefrogs 148:337 (Narins PM)
– sequence in the *Aeschna* larva 127:89 (Etienne AS)
Bibio, sexual dimorphism in visual system 150:379, 395 (Zeil J)
Bimodal interneurone in the locust brain 126:317 (Bacon J, Tyrer M)
Biochemical composition of starfish pyloric caeca 148:49 (Plas AJ van der, Voogt PA)
Biochemistry of bee cuticular sclerotization 145:17 (Andersen SO, et al)
– of scallop escape response 137:105 (Zwaan A de, et al)
Bioluminescence, circadian rhythm in *Gonyaulax* 138:1 (Dunlap JC, et al), 19 (Krasnow R, et al)
–, ionic dependence of *Noctiluca* action potential 134:137 (Nawata T, Sibaoka T)
–, microsource activity in dinoflagellate – 145:517 (Widder EA, Case JF)
–, two flash forms in a dinoflagellate 143:43 (Widder EA, Case JF)
–, Ca-dependent, in a polychaete worm 129:67 (Herrera AA)
Biomphalaria, enzymes in hepatopancreas 129:129 (Sollock RL, et al)
–, microcalorimetric studies 135:101 (Becker W)
Bipolar cell ramifications in turtle retina 144:459 (Weiler R)
Biting, effect of food arousal in *Aplysia* 123:31 (Susswein AJ, et al)
Blaberus, double-peaked locomotor activity rhythm 137:249 (Wiedenmann G)
–, sensory adaptation in a mechanoreceptor 131:1 (Chapman KM, et al)
Blackbird, see *Agelaius*
Bladder function in a treefrog 133:211 (Shoemaker VH, Bickler PE)
Blaptica, active ion transport by a sensory epithelium 134:131 (Küppers J, Thurm U)
Blinding, effect on lizard circadian organization 141:537 (Underwood H)
–, effect on ommochrome content in insect epidermis 130:331 (Bückmann D)
Blood, see also circulation, hemocyanin, hemoglobin, hemolymph
–, acid-base regulation in fish plasma 140:249 (Thomas S)
–, coagulation in decapod Crustacea 142:473 (Ghidalia W, et al)
–, effect of photoperiod and stress on newt leucocytes 125:205 (Bennett MF, Reap LE)
–, Hb-O_2 affinity of mouse embryonic erythrocytes 129:333 (Wells RMG)
–, phosphate binding by llama and camel hemoglobin 136:67 (Bauer C, et al)
–, quaternary structure of *Cupiennius* hemocyanin 140:199 (Markl J)
–, rapid changes in acid-base status of trout – 148:123 (Thomas S, Le Ruz H)
–, respiratory properties of seal – 149:49 (Lapennas GN, Reeves RB)
–, subunit heterogeneity in hemocyanins of Chelicerata 130:283 (Markl J, et al)
–, thermoacclimation of oxygen transport in trout – 140:255 (Nikinmaa M, et al)
Blood cells, red, osmoregulation by mollusc – 138:283, 291, 299 (Amende LM, Pierce SK)
– composition, seasonal changes in sparrows 129:151 (de Graw WA, et al)
– count cycle in mouse 149:307 (Bennett MF, Pomeroy GC)
– flow in isolated perfused fish gills 133:233 (Farrell AP, et al)
– –, effect on oxygen consumption of skeletal muscle 128:185 (Grubb B, Folk GE Jr)
– – in salt water-adapted Pekin duck salt gland 149:457 (Kaul R, et al)

Blood flow, sympathetic control of – in cod gills 144:157 (Nilsson S, Pettersson K)
– –, mammary, in lactating rabbit 138:31 (Jones CS, Parker DS)
– gas content, effect of temperature on spider – 134:331 (Loewe R, Brauer de Eggert H)
– oxygen, increases during exercise in shark 147:41 (Bushnell PG)
– – affinity, fetal-maternal shift in a viviparous lizard 142:495 (Grigg GC, Harlow P)
– – binding properties in hypoxic trout 136:83 (Soivio A, et al)
– – dissociation curve of *Rana* 129:111 (Tazawa H, et al)
– pressure, effect of breathing on toad – 143:223 (Segura ET, et al)
– –, effects of catecholamines on arterial – in the eel 129:343 (Peyraud-Waitzenegger M)
– respiratory properties in the carp 128:117 (Lykkeboe G, Weber RE)
– – – in a treefrog 136:71 (Johansen K, et al)
– – – in trout 145:117 (Tetens V, Lykkeboe G)
– streams, separate, in teleostean heart 149:435 (Ishimatsu A, Itazawa Y)
– volume as a controlling factor for leech body water homeostasis 127:343 (Zerbst-Boroffka I)
Blowfly, see *Calliphora, Phaenicia, Phormia, Protophormia*
Bobwhite, see *Colinus*
Body temperature in neotropical marsupials 125:115 (McNab BK)
– – in winter and summer acclimatized swans 136:61 (Bech C)
– water homeostasis, control in the leech 127:343 (Zerbst-Boroffka I)
– to-brain temperature difference in pigeons, role of rete mirabile ophthalmicum 129:119 (Kilgore DL, et al)
Boettcherisca, interaction between retinula cells 125:209 (Mimura K)
–, phototactic behavior 144:75 (Mimura K)
–, receptive field patterns in photoreceptors 141:349 (Mimura K)
Bohr shift, reversed, in gastropod hemocyanin 129:97 (Brix O, et al)
Bolborhynchus, respiration 142:479 (Bucher TL)
Bombardier beetles, reactions of toads to – 135:41, 51 (Dean J)
Bombina, coding of auditory signals in torus semicircularis 138:131 (Walkowiak W)
–, temperature effects on auditory thresholds 130:9 (Mohneke, R, Schneider H)
Bombus, foraging movements 134:113 (Waddington KD, Heinrich B)
–, spectral sensitivity of compound eye and median ocellus 139:261 (Meyer-Rochow VB)
Bombyx, action potentials of neurons 140:43 (Miyazaki S)
–, color receptors in larval exes 149:317 (Ichikawa T, Tateda H)
–, sorbitol in diapause eggs 147:21 (Furusawa T, et al)
–, thermoregulation 129:315 (Ploye H)
–, trehalose absorption by ovaries 131:333 (Shimada S, Yamashita O)
Bowerbankia, protective reflex 137:297 (Wiese K, et al)
Brachydanio, function of Mauthner cells 140:337 (Eaton RC, Kimmel CB), 343 (Kimmel CB, et al)
Bradycardia in *Aplysia* exposed to air 122:311 (Feinstein R, et al)
–, recovering from diving in bullfrogs 133:193 (Lillo RS)
Brain, see also central nervous system
–, acoustic evoked activity in – of sharks 129:223 (Bullock TH, Corwin JT)
–, acoustic forward masking and suppression in treefrog midbrain 146:435 (Hillery CM, Fay RR)
–, auditory neurons in bat superior olivary complex 128:47 (Jen PH-S)
–, auditory neurons in cricket – 140:81 (Boyan GS)
–, auditory properties of bat inferior colliculus neurons 147:351 (Jen PH-S, Schlegel PA)
–, bimodal interneurone in the locust tritocerebrum 126:317 (Bacon J, Tyrer M)
–, cerebellar action on dogfish reflex movements 134:69 (Paul DH, Roberts BL)
–, directionality of frog torus semicircularis neurons 144:419 (Feng AS)
–, direction-specific neurons in frog pretectum 140:53 (Katte O, Hoffmann K-P)
–, dye coupling and neuronal networks in crayfish – 140:121 (Glantz RM, Kirk MD)
–, electroreceptive representation in catfish cerebellum 145:289 (Tong SL, Bullock TH)
–, extracranial auditory evoked potentials in the manatee 148:547 (Bullock TH, et al)
–, extraretinal photoreceptors in vertebrates 130:277 (Hartwig HG, Veen T van)
–, frequency representation in frog dorsal medullary nucleus 143:339 (Fuzessery ZM, Feng AS)
–, frequency selectivity of anuran medulla 150:107 (Fuzessery ZM, Feng AS)
–, frequency selectivity in frog auditory midbrain 146:471 (Fuzessery ZM, Feng AS)
–, functional organisation of Guinea fowl auditory neostriatum 132:243 (Bonke D, et al), 257 (Scheich H, et al)
–, goldfish lateral line lobe 127:61 (Caird DM)
–, horizontal movement detectors in bee – 147:155 (DeVoe RD, et al)
–, inferior colliculus neurons of the mouse 127:175 (Willott JF, Urban GP)
–, inferior collicular neurons of paleotropical bats 146:423 (Jen PHS, Suthers RA)
–, inferior colliculus neurons of *Rhinolophus* 125:217 (Möller J, et al), 227 (Möller J)
–, integration of sensory information in fish optic tectum 147:287 (Bastian J)
–, mating call selectivity in frog thalamus and midbrain 150:333 (Fuzessery ZM, Feng AS)
–, multimodal interneurons in a flatworm – 147:171 (Solon MH, Koopowitz H)
–, neural basis of a sensory filter in jamming avoidance response 145:153 (Partridge BL, et al)
–, neural correlates of JAR in *Eigenmannia* 136:235 (Bastian J, Heiligenberg W)
–, neurosecretory material release in bee pars intercerebralis 126:327 (Heinzeller T, Vogel H)
–, nucleus mesencephali exterolateralis and electrocommunication in mormyrid fish 144:327 (Moller P, Szabo T)
–, olfactory bulb units of salmon 127:147 (Bodznik D)
–, olfactory excitation of interneurons in lobster – 150:129 (Hamilton KA, Ache BW)
–, olfactory neurones in cockroach deutocerebrum 134:159 (Selzer R)
–, olfactory pathway of pigeon 137:39 (Madacar AW, et al)
–, optic tectum responses to moving stimuli 128:13 (Riemslag FCC, Schellart NAM)
–, photosensitive neurons in spider 150:467 (Yamashita S, Tateda H)
–, respiratory neuron activity in carp – 133:131 (Ballintijn CM, et al)
–, responses of single cells in blackbird auditory nuclei 126:347 (Sachs MB, Sinnott JM)
–, role in control of toad water economy 146:95, 101 (Segura ET, et al)
–, sensorimotor interfacing in toad optic tectum 144:429 (Weerasuriya A, Ewert J-P)
–, sensory function of ray cerebellum 148:399 (Tong SL, Bullock TH)
–, sensory inputs to frog midbrain 142:161 (Comer C, Grobstein P)
–, signal processing in carp mesencephalic trigeminal neurons 141:157 (Jüch PJW)
–, single unit responses in bat cochlear nucleus 149:369 (Vater M)
–, single unit responses in bat inferior colliculus 141:249 (Vater M)
–, tectal neuron responses to prey stimuli in salamanders 135:251 (Himstedt W, Roth G)
–, torus longitudinalis in teleosteans 150:39 (Northmore DPM et al)
–, visual interneurons in bee – 121:65 (Erber J, Menzel R); 134:253 (Guy RG, et al)
–, wind-sensitive interneuron in locusts 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
– temperature in pigeons 129:115 (Bernstein MH, et al)
– temperature in zebra finch 145:89 (Bech C, Midtgård U)
Brain-implant stimulation of slug development 143:311 (McCrone EJ, et al)

Brainstem, auditory evoked responses to tone bursts in a bat 146:283 (Belknap DB, Suthers RA)
–, electro- and mechanoreceptive center in catfish nucleus praeeminentialis 145:299 (Tong SL)
–, thermal stimulation and cardiovascular changes in ducks 147:71 (Bech C, et al)
Branchial activities of enzymes in sea and fresh water adapted teleost 145:51 (Doneen BA)
– vascular resistance, nervous control in the cod 129:179 (Pettersson K, Nilsson S)
Breathing, see also respiration
–, control during exercise in ducks 147:107 (Kiley JP, et al)
–, effect on toad blood pressure and heart rate 143:223 (Segura ET, et al)
Brienomyrus, behavioral responses to complex impedances 145:459 (Meyer JH)
–, EOD sound response 143:435 (Kramer B, et al)
Brightness perception in *Drosophila* mutants 133:283 (Reichert H, Bicker G)
Bryozoa, see *Bowerbankia*
Buccal ganglion, substrates of command ability in slug – 146:449, 461 (Gilette R, et al)
Buccinum, oxygen-binding properties of hemocyanin 129:97 (Brix O, et al)
Buffering capacity of vertebrate muscle 143:191 (Castellini MA, Somero GN)
Bufo, ACTH effect on habituation 131:129 (Horn E, et al)
–, activity metabolism 144:247 (Taigen TL, Pough FH)
–, background structure and prey discrimination 147:179 (Ewert J-P, et al)
–, configurational prey selection 126:105 (Ewert J-P, Kehl W)
–, depth vision in approach to prey 131:179 (Lock A, Collett T)
–, detour behavior 146:261 (Collett TS)
–, effect of breathing on blood pressure and heart rate 143:223 (Segura ET, et al)
–, effect of temperature and pH on muscle contraction 145:67 (Renaud JM, Stevens ED)
– eye closure and retinal ganglion cell responses 125:301 (Borchers H-W, Ewert J-P)
–, key stimuli of prey 128:189 (Borchers H-W, et al)
–, middle ear sensitivity 127:97 (Moffat AJM, Capranica RR)
–, movement direction sensitive retinal ganglion cells 129:211 (Ewert J-P, et al)
–, neural temperature compensation 142:411 (Macdonald JA)
–, prey feature detectors in the visual system 126:43 (Ewert J-P, et al)
–, prey selection in response to moving configurational stimuli 129:207 (Beck A, Ewert J-P)
–, prey-selective neurons in optic tectum 144:429 (Weerasuriya A, Ewert J-P)
–, properties of tectal neurons 132:191 (Ewert J-P, et al)
–, reaction to bombardier beetles 135:41, 51 (Dean J)
–, role of CNS in control of water economy 146:95, 101 (Segura ET, et al)
–, variability of response in compass orientation 144:45 (Adler K, Taylor DH)
–, visual neurons sensitive to moving configurational stimuli 126:35 (Wietersheim A v, Ewert J-P)
Bug, see Heteroptera
Bulldog ant, see *Myrmecia*
Bullfrog, see *Rana*
Bumblebee, see *Bombus*
Bumps, locust photoreceptors 122:189, 125:13 (Lillywhite PG)
Bunting, see *Emberiza*
Burbot, see *Lota*
Bursatella, circadian pacemaker in the eye 142:403 (Block GD, Roberts MH)
Bushbaby, see *Galago*
Bushcricket, see *Acripeza, Decticus, Ruspolia, Tettigonia*
Busycon, energy metabolism in ventricle 142:457 (Ellington WR)
Butanol, acute tolerance of goldfish to – 142:61 (Hill MW, et al)
Butterfly, see Lepidoptera

C

Caddis fly, see *Hydropsyche*
Caeca, pyloric, biochemical composition in starfish – 148:49 (Plas AJ van der, Voogt PA)
Caecal pouch, absorption in rabbit – 133:205 (Leng-Peschlow E, Marty J)
Caecum, role in hen water and electrolyte regulation 147:61 (Rice GE, Skadhauge E)
Caedicia, auditory function 142:169 (Hill KG, Oldfield BP)
–, tonotopic organisation of auditory receptors 147:461 (Oldfield BP)
Caenolestes, body temperature and metabolism 125:115 (McNab BK)
Caenorhabditis, behavioral responses to chemical stimulation 136:327, 333 (Dusenbery DB)
–, chemotactic behavior of mutants 137:93 (Dusenbery DB), 353 (Dusenbery DB, Barr J)
–, mutants defective in thermotaxis 137:353 (Dusenbery DB, Barr J)
Caiman, absence of lingual salt glands 149:43 (Taplin LE, et al)
Calcium, distribution and transport in frog myelinated nerve 141:319 (Diecke FPJ, Stout MA)
–, effect on electroreceptor operation 121:381 (Bauswein E)
–, effect on flounder cardiac contractility 131:293 (Gesser H, Poupa O)
–, effect on ionic transport in fish gill 141:511 (Pic P, Maetz J)
–, effect on trout gill potentials 126:277 (McWilliams PG, Potts WTW)
–, localization in an insect ommatidium 127:245 (Burovina IV, et al)
–, odorant for migrating salmons 127:157 (Bodznik D)
–, renal clearance in turtle 141:463 (Laverty G, Clark NB)
–, role in spike broadening in slug buccal neuron 146:449 (Gilette R, et al)
–, role in volume regulation of mollusc red blood cells 138:291 (Amende LM, Pierce SK)
– dependent bioluminescence in a polynoid polychaet worm 129:67 (Herrera AA)
– depletion depolarizations in leech Retzius cell membrane 150:499 (Yang J, Lent CM)
– distribution in myocardial tissue, effect of acidosis on – 143:245 (Gesser H, Poupa O)
– movements in rat smooth muscle 126:233 (Huddart H, Saad KHM)
– regulation of fish actomyosin 129:163 (Johnston IA), 169 (Johnston IA, Walesby NJ)
– response, *Stylonychia* membrane 121:15 (Peyer JE de, Machemer H)
Call, mating, see mating call
–, two-note, communicative significance in a treefrog 127:1 (Narins PM, Capranica RR)
Callianassa, environmental effects on hemocyanin 143:253, 261 (Miller KI, Holde KE Van)
–, muscle fiber water 146:113 (Freel RW)
Callinectes, ammonia excretion 141:457 (Kormanik GA, Cameron JN)
–, antennal gland function 123:143 (Cameron JN, Batterton CV)
–, color receptors 145:549 (Martin FG, Mote MI)
–, hypercapnic acidosis 123:137 (Cameron JN)
–, inhibitor effects on gill ion fluxes 133:219 (Cameron JN)
–, NaCl balance in fresh water 123:127 (Cameron JN)
–, neurosecretory polypeptides in eyestalk 134:303 (Andrew RD, Saleuddin ASM)
–, oxygen uptake and transport during exercise 148:111 (Booth CE, et al)
Calling, behavioral refractory period in treefrog – 148:337 (Narins PM)
–, development of frog – 126:49 (Schmidt RS)
–, effect of laryngeal nerve transection in squirrel monkey 123:23 (Jürgens U, et al)
–, effects of masking noise on treefrog – 147:439 (Narins PM)
– song recognition in the cricket 146:217 (Pollack GS), 361 (Thorson J, et al)
Calliphora, ATPases in eyes and brain 123:245 (Rivera MF, Langer H)
–, dark recovery of photoreceptor 122:215 (Moring J, Järvilehto M)

Calliphora, development of visual receptor potentials 150:529 (Järvilehto M, Finell N)
–, effect of ions on photoreceptor potentials 132:87 (Muijser H)
–, electrophysiology of photoreceptors 129:19 (Hardie RC)
–, giant vertical cells in lobula plate 149:163 (Hengstenberg R, et al), 179 (Hengstenberg R)
–, information transmission in visual system 126:87 (French AS, Järvilehto M)
–, landing response 138:253 (Eckert H, Hamdorf K)
–, light adaptation in peripheral visual system 128:319 (Laughlin SB, Hardie RC)
–, light adaptation in photoreceptors 145:169 (Matić T, Laughlin SB)
–, movement responses in medulla 138:93 (DeVoe RD)
–, non-twisted rhabdomeres 134:109 (Ribi WA)
–, onset of photoreceptor light adaptation 132:153 (Moring J, et al)
–, photopigment model 135:209 (Razmjoo S, Hamdorf K)
–, photostable pigment in R7 125:275 (Kirschfeld K, et al)
–, positional head reflexes 126:137 (Horn E, Lang H-G)
–, properties of macrochaetae 132:55 (Theiß J)
–, salt taste quality discrimination 133:53 (Maes FW, Bijpost SCA)
–, spatial integration in compound eye 146:321 (Dubs A)
–, spectral sensitivity during landing 150:319 (Tinbergen J, Abeln RG)
–, spectral sensitivity of monopolar neurons 123:335 (Moring J)
–, spectral sensitivity of photoreceptors 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al), 41 (Smola U, Meffert P); 134:95 (Bernard GD, Stavenga DG)
–, spontaneous phototactic reaction 123:307 (Meyer HW)
–, taste cell responses 128:1 (Molen JN van der, et al)
–, twisted rhabdomeres 133:291 (Smola U, Tscharntke H); 142:43 (Smola U, Wunderer H)
–, wing movements and aerodynamic force generation 150:251 (Nachtigall W, Roth W)
Calotes, arginine metabolism 140:261 (Baby TG, Reddy SRR)
Caluromys, body temperature and metabolism 125:115 (McNab BK)
Cambaroides, neural mechanisms of reversal of uropod steering movement 145:471 (Yoshino M, et al)
Camel, see *Camelus*
Camelus, phosphate binding by hemoglobin 136:67 (Bauer C, et al)
Camponotus, energetic costs of running 137:151 (Jensen TF, Holm-Jensen I)
Canal-receptor properties in a crab 130:101 (Janse C, Sandeman DC)
Canary, reversal of hypoglossal dominance 134:227 (Nottebohm F, et al)
Cancer, coagulation 142:473 (Ghidalia W, et al)
–, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, ion fluxes and diffusion potentials 131:285 (Robinson GD, Potts WTW)
–, iron binding protein in blood 148:101 (Huebers HA, et al)
–, muscle fiber water 146:113 (Freel RW)
–, neural pattern generation 130:221, 229 (Hermann A)
–, sinus gland hormones 122:359 (Keller R)
–, ventilation and acid-base status during temperature acclimation 128:109 (McMahon B, et al)
–, ventilatory pauses 145:81 (Burnett LE, Bridges CR)
Captivity, effect on lizard metabolic capacities 129:123 (Gleeson TT)
Carassius, see also goldfish
–, acute tolerance to alcohols 142:61 (Hill MW, et al)
–, anaerobic energy metabolism 136:45; 146:41 (Thillart G van den, et al)
–, anaerobic CO_2 production 149:75 (Thillart G van den, Verbeek R)
–, anaesthetics temperature and behavior 135:327 (Hill MW, et al)
–, auditory temporal discrimination 147:201 (Fay RR)
–, behavioral resistance-adaptation 129:241 (Hoyland J, et al)
–, behavioral thermoregulation and preoptic lesions 129:193 (Nelson DO, Prosser CL)
–, effects of lanthanum on gill ion exchange mechanisms 129:145 (Eddy FB, Bath RN)
–, eye positions 128:241 (Graf W, Meyer DL)
–, responses to moving stimuli in optic tectum 128:13 (Riemslag FCC, Schellart NAM)
–, temperature acclimation and actomyosin ATPase 129:163 (Johnston IA)
–, temperature acclimation of muscles 124:111 (Johnston I, Lucking M)
–, transaminase reactions in anaerobiosis 147:53 (Waarde A van, et al)
Carausius, effects of blinding on epidermal ommochromes 130:331 (Bückmann D)
–, hygro- and thermoreceptive triad in antennal sensillum 132:149 (Tichy H)
–, ionic regulation of stretch receptor action potentials 122:45 (Finlayson LH, Orchard I)
–, perturbation of walking 148:195 (Dean J, Wendler G)
–, reflex behaviour 143:81 (Graham D, Wendler G)
–, sense organs in the femur 121:99 (Bässler U)
–, tryptophan 2,3-dioxygenase 132:351 (Stratakis E, Schartau W)
–, tryptophan metabolism during development 137:123 (Stratakis E)
Carbohydrate, role on torpor duration in ground squirrels 147:129 (Zimmerman ML)
– catabolism in a planarian 146:107 (Barrett J, Butterworth PE)
– content during starvation in a snail 123:149 (Streit B)
– metabolism, sea cucumber 122:347 (Ellington WR, Hammen CS)
– reserves, role in fly feeding preference patterns 139:59 (Rachman NJ)
– transport in *Moniliformis* 126:223 (Starling JA, Fisher FM Jr)
Carbon dioxide transport by shrimp hemocyanin 145:21 (Weber RE, Hagerman L)
Carcharhinus, acoustic evoked activity in the brain 129:223 (Bullock TH, Corwin JT)
Carcharodon, urea-requiring lactate dehydrogenases 125:135 (Yancey PH, Somero GN)
Carcinus, aquatic and aerial respiration 127:315 (Taylor EW, Butler PJ)
–, coagulation 142:473 (Ghidalia W, et al)
–, color receptors 145:549 (Martin FG, Mote MI)
–, dual reflex motor control of non-spiking muscle receptor 148:365 (Cannone A, Bush BMH)
–, emersion into air 132:305 (Wheatly MG, Taylor EW)
–, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, hemolymph acid-base changes 141:489 (Burnett LE, Johansen K)
–, ions and osmotic shock in isolated axons 129:365 (Kévers C, et al)
–, reflexes mediated by nonimpulsive muscle receptor 142:103, 113 (Cannone AJ, Bush BMH)
–, respiration at high temperatures 130:309 (Taylor EW, Wheatly MG)
–, responses to hypoxia 122:391 (Taylor EW, et al)
–, rhythmic burst generation in ventilatory motoneurons 150:1 (Simmers AJ, Bush BMH)
–, role of cuticular stress detector in locomotion 125:79 (Findlay I)
–, sinus gland hormones 122:359 (Keller R)
Cardiac, see also heart
– activity, neurohormonal control in *Helix* 128:269, 277 (Lloyd PE)
– contractility, effects of acidosis and Ca on flounder – 131:293 (Gesser H, Poupa O)
– ganglion, spontaneous and repetitive driver potentials in crab – 149:263 (Berlind A)
– muscle fibres, synaptic and regenerative responses of crab – 143:349 (Benson JA)
– output in lactating rabbit 138:31 (Jones CS, Parker DS)
– vagotomy, effect on dogfish respiration 132:289 (Short S, et al)
Cardioactive peptides of a snail 138:265; 139:333, 341 (Lloyd PE)

Cardio-respiratory allometry of marsupials 145:95 (Dawson TJ, Needham AD)
Cardiovascular adaptation to food-arousal in a mollusc 149:31 (Koch UT, Koester J)
– changes in response to thermal stimulation of brain and spinal cord in ducks 147:71 (Bech C, et al)
– characteristics of resting marsupials 145:95 (Dawson TJ, Needham AD)
– control in the toad 143:223 (Segura ET, et al)
– effects of catecholamines, seasonal changes in the eel 138:367 (Peyraud-Weitzenegger M, et al)
– – of parathyroid hormone in frogs 147:101 (Strickland ML, et al)
– physiology of an aquatic snake 144:215 (Seymour RS, et al)
– responses to exercise in the possum 124:143 (Baudinette RV, et al)
– system, physiology of cod – 137:131 (Pettersson K, Nilsson S), 139 (Wahlqvist I), 146 (Wahlqvist I, Nilsson S)
Cardium, energy metabolism of foot muscle 137:177 (Gäde G)
Carduelis, effect of cold on norepinephrine turnover 146:137 (Koban M, Feist DD)
–, kinematic and aerodynamic parameters of tethered flight 127:123 (Woike M, Gewecke M)
–, seasonal acclimatization to temperature 125:101 (Carey C, et al)
Carp, see *Cyprinus*
Carybdea, central control of swimming 133:357 (Satterlie RA)
Cat, cells in the somatosensory cortex responding to vibrissae displacement 125:29 (Hellweg FC)
–, composition of inner ear lymph 126:1 (Peterson SK, et al)
–, potassium relaxation of smooth muscle 135:357 (Webb RC, Bohr DF)
–, seasonal rhythm of scratch reflex 142:227 (Randall W)
–, visual properties of suprachiasmatic neurones 135:349 (Groos GA, Mason R)
Catabolism, carbohydrate and lipid – in a planarian 146:107 (Barrett J, Butterworth PE)
Cataglyphis, colour vision 131:217 (Kretz R)
–, functional characteristics of photoreceptors 137:63 (Mote MI, Wehner R)
–, model for inter-receptor coupling in retina 139:277 (Martin FG, Mote MI)
–, searching behavior 142:315 (Wehner R, Srinivasan MV)
Catbird, see *Dumetella*
Catch contractures of molluscan smooth muscle 148:491 (Painter SD)
Catecholamines, effects on cod systemic and branchial vascular beds 137:139 (Wahlqvist I)
–, effects on eel ventilation and arterial blood pressure 129:343 (Peyraud-Waitzenegger M)
–, effect of hypoxia on circulating – in dogfish 127:325 (Butler PJ, et al)
–, effect of hypoxia on dogfish plasma – 132:297 (Butler PJ, et al)
–, seasonal changes in cardiovascular and ventilatory effects in eels 138:367 (Peyraud-Weitzenegger M, et al)
Caterpillars, distribution of color receptors in eyes 149:317 (Ichikawa T, Tateda H)
–, vibration reception by thoracal hairs 125:67 (Tautz J)
Catfish, see *Arius*, *Ictalurus*, *Kryptopterus*, *Plotosus*
Catostomus, effects of pinealectomy on thermoregulation rhythms 146:235 (Kavaliers M)
Cave salamander, see *Eurycea*
Cecropia silk moth, see *Hyalophora*
Celestial compass orientation in lake migrating salmon fry 137:243 (Quinn TP)
Cell structure changes in *Pieris* larvae 136:11 (Lhonoré J, et al)
Central motor program for turtle scratch reflex 140:287 (Stein PSG, Grossman ML)
– neurons, control of action pattern in *Tritonia* 123:253 (Taghert PH, Willows AOD)
– nervous excitation, effect of alarm substance on – 123:281 (Pfeiffer W, Riegelbauer G)
Central nervous system, see also brain, ventral cord
– – –, abnormal axonal discharges in *Aplysia* 132:127 (Gola M, Ducreux C)
– – –, activation of firefly luminescence through DUM neurons 148:503 (Christensen TA, Carlson AD)
– – –, auditory interneuron in cricket prothoracic ganglion 146:351 (Popov AV, Markovich AM)
– – –, auditory processing in locust metathoracic ganglion 144:305 (Römer H, et al)
– – –, bilateral coding of sound direction in bushcricket – 140:101 (Rheinlaender J, Römer H)
– – –, cells in cat somatosensory cortex responding to vibrissae displacement 125:29 (Hellweg FC)
– – –, cholinergic activities in locust 141:271 (Breer H)
– – –, cholinergic nature of cockroach giant fibers 126:157 (Dagan D, Sarne Y)
– – –, coding of auditory and vibrational signals in grasshopper bimodal ventral-cord neurons 139:267 (Kalmring K, Kühne K)
– – –, control of rhythmic burst generation in crab ventilatory motoneurons 150:1 (Simmers AJ, Bush BMH)
– – –, control of swimming in a jellyfish 133:357 (Satterlie RA)
– – –, compartmentalization of snail multipolar neurons 147:503 (Haydon PG, Winlow W)
– – –, counteraction of visually induced tonus asymmetries in goldfish – 150:473 (Graf W, Meyer DL)
– – –, deutocerebral interneurones in cockroach 145:447 (Burrows M, et al)
– – –, directional responses to sound in cricket interneurons 130:137, 151 (Boyan GS)
– – –, displacement-sensitive pathway in crayfish – 147:447 (Wiese K, Schultz R)
– – –, giant vertical cells in fly lobula plate 149:163 (Hengstenberg R, et al.), 179 (Hengstenberg R)
– – –, homologous neurons in nudibranch molluscs 131:277 (Dickinson PS)
– – –, lateral line pathways in *Xenopus* 136:203 (Plassmann W)
– – –, local interneurons in crayfish terminal abdominal ganglion 149:145 (Reichert H, et al)
– – –, medulla neurons in crickets 136:191 (Honegger H-W)
– – –, motor pattern generation in crab – 130:221, 229 (Hermann A)
– – –, motor rhythms in discharge of cricket descending interneurons 148:209 (Otto, D, Weber T)
– – –, neural gill control in *Aplysia* 139:17 (Dickinson PS)
– – –, neural gill control in *Pleurobranchaea* 139:11 (Dickinson PS)
– – –, neural topography of *Drosophila* courtship song 129:85 (Schilcher F von, Hall JC)
– – –, neuronal processing of sound in cricket – 146:161 (Wohlers DW, Huber F)
– – –, olfactory-induced neural activity in crayfish – 140:295 (Ache BW, Sandeman DC)
– – –, oral responses from chicken solitary complex 130:259 (Gentle MJ)
– – –, parallel encoding by dragonfly movement-detecting interneurons 142:27 (Olberg RM)
– – –, pheromone sensitivity of moth deutocerebrum 132:235 (Boeckh J, Boeckh V)
– – –, responses to sensory inputs in locust neck connective neurons 147:379 (Williamson R, Burns MD)
– – –, sensory interneurons in crayfish – 148:143 (Sigvardt KA, et al)
– – –, stomatogastric ganglion of the lobster 122:227 (Mulloney B)
– – –, substrates of command ability in slug buccal neuron 146:449, 461 (Gilette R, et al)
– – –, swim-initiating interneurons in leech – 148:253, 265 (Weeks JC)
– – –, synaptic transmission in lamprey spinal cord 143:423 (Homma S)
– – –, transmission in locust movement detector system 137:233 (Rowell CHF, O'Shea M)
– – –, vascularization of crayfish abdominal nerve cord 143:93 (Brown SK, Sherwood DN)
– – –, vertical-horizontal neuron in fly lobula plate 149:195 (Eckert H)

Central neural motor programs in *Limulus* 141:87 (Wyse GA, et al)
– projections of cricket primary auditory neurons 137:27 (Esch H, et al)
– thermal stimulation, effects on pigeon thermoregulation 127:75 (Schmidt I)
Centruroides, seasonal changes in cuticular properties 129:319 (Toolson FC, Hadley NF)
Cepaea, crop juice esterases 122:375; 132:327 (Oxford GS)
Cephalopods, see *Illex, Loligo, Nautilus, Octopus, Sepia*
Cepphus, nictitating membrane 125:335 (Sivak JG, et al)
Cercal afferences, effects on cricket head position 150:93 (Horn E, Bischof H-J)
– afferents, post activity effects on cockroach – 150:121 (Dagan D, et al)
– interneuron, equilibrium detecting system in the cricket 150:141 (Sakaguchi DS, Murphey RK)
– interneurons, inhibition in cricket – 135:269 (Levine RB, Murphey RK)
– mechanoreceptors in the cricket 122:9 (Dumpert K, Gnatzy W)
– nerve, development of cricket – in absence of external activation 149:277 (Dagan D, et al)
– – responses to wind in the cockroach 133:97 (Westin J), 103 (Dagan D, Camhi JM); 147:471 (Dagan D, Volman S)
– receptors and interneurons of the cricket 129:51 (Tobias M, Murphey RK)
– systems, constancy mechanisms in cricket – 137:287 (Rozhkova GI)
Cercus-to-giant interneuron system, response to cricket song 141:311 (Kämper G, Dambach M)
Cerebellar action on dogfish reflex movements 134:69 (Paul DH, Roberts BL)
– system, goldfish lateral line lobe 127:61 (Caird DM)
Cerebellum, electroreceptive representation in catfish – 145:289 (Tong SL, Bullock TH)
–, respiratory neurons in carp – 133:131 (Ballintijn CM, et al)
–, sensory functions of thornback ray – 148:399 (Tong SL, Bullock TH)
Cerebral neurons, photosensitive, in spiders 150:467 (Yamashita S, Tateda H)
Cervical-ocular reflex, interaction with optokinetic reflex in rabbits 134:11 (Denia A, et al)
Chalcides, postural mechanisms 131:235 (Meyer DL, et al)
Chamaeleo, lung compliance 138:321 (Perry SF, Duncker H-R)
Champsocephalus, calcium regulation of actomyosin 129:169 (Johnston IA, Walesby NJ)
Channa, difference in blood oxygen levels in heart outflow vessels 149:435 (Ishimatsu A, Itazawa Y)
Charr, see *Salvelinus*
Chelicerata, components of *Limulus* light responses 141:303 (Maaz G, et al)
–, coordination of *Limulus* heart and gill rhythms 124:267 (Watson III WH, Wyse GA)
–, gill cleaning, ventilation and swimming in *Limulus* 141:67,77 (Watson III WH), 87 (Wyse GA, et al)
–, hemocyanins 130:283 (Markl J, et al)
–, slow potentials in *Limulus* optic nerve fibers 141:239 (Behrens ME, Fahy JL)
Chelonia, ventilation during exercise 134:315 (Jackson DC, Prange HD)
Chelophyes, action potentials and contraction of myoepithelium 144:555 (Bone Q)
–, electrophysiology of myoid epithelium 143:329 (Chain BM, et al)
Chemical defense of bombardier beetles 135:51 (Dean J)
Chemoreception, see also olfaction, taste
–, amino acid sensitive units in crayfish leg 144:67 (Bauer U, et al)
–, ascending activity in lobster olfactory-globular tract 130:63 (Ache BW, Fuzessery ZM)
–, calcium as odorant for migrating salmon 127:157 (Bodznik D)
–, chemical gradient detection by catfish 140:95 (Johnsen PB, Teeter JH)
–, computerized classification of fly taste cell responses 128:1 (Molen JN van der, et al)
–, effects of sugars on fly water receptor 126:131 (Wieczorek H, Köppl R)
–, electrophysiology of catfish oro-pharyngeal taste system 150:345 (Kanwal JS, Caprio J)
–, feeding response in *Hydra* elicited by trypsin 150:521 (Kitajima M, Hanai K)
–, food odor processing by cockroach antennal olfactory receptors 144:509 (Selzer R)
–, food odor specific neurons in cockroach deutocerebrum 134:159 (Selzer R)
–, function of pigeon olfactory pathway 137:39 (Madacar AW, et al)
– in a gastropod mollusc 149:221, 235 (Bicker G, et al)
–, genetic dimorphism of trehalose sensitivity in *Drosophila* 147:433 (Tanimura T, et al)
–, glucosinolate-sensitive cells in a beetle 146:393 (Sutcliffe JF, Mitchell BK)
–, glutathione receptor of *Hydra* 137:73 (Hirakawa Y, Kijima H)
–, gustatory responses of insects and gerbils to methyl glycosides 141:297 (Jakinovich W, et al)
–, gustatory sensitivity of *Yponomeuta* larvae 134:265 (Drongelen W van)
–, hygroreceptor mechanism in cockroach antenna 124:53 (Yokohari F)
–, labellar lobe spreading in the blowfly 121:115 (Pollack GS)
–, multiple receptor proteins for fly sweet taste 141:265 (Tanimura T, Shimada I)
–, narrow-spectrum chemoreceptors in lobster walking legs 146:181 (Derby CD, Atema J)
–, olfaction and taste in the catfish 123:357 (Caprio J)
–, olfactory bulb units of sokeye salmon 127:147 (Bodznik D)
–, olfactory excitation of lobster brain interneurons 150:129 (Hamilton KA, Ache BW)
–, olfactory orientation to foods in a snail 136:267 (Croll RP, Chase R); 143:357 (Chase R, Croll RP)
–, olfactory receptors on cockroach antenna 128:227 (Sass H)
–, olfactory sensilla in ticks responding to pheromones 148:411 (Waladde SM)
–, olfactory sensitivity of a snail 148:225 (Chase R)
–, osmotropotaxis in *Drosophila* 147:479 (Borst A, Heisenberg M)
–, pheromone sensitivity in moth deutocerebrum 132:235 (Boeckh J, Boeckh V)
–, pyridine receptors in crayfish walking leg 148:221 (Hatt H, Bauer U)
–, reaction chain in *Hydra* feeding behavior 150:99 (Koizumi O, et al)
–, reception of bark beetle pheromone by a predaceous clerid beetle 150:371 (Hansen K)
–, responses of cockroach deutocerebral interneurones to pheromones 145:447 (Burrows M, et al)
–, responses from eel peripheral olfactory system 148:379 (Silver WL)
–, responses of mud puppy glossopharyngeal taste system 143:143, 151 (Samanen DW, Bernard RA)
–, responses of a nematode to controlled chemical stimulation 136:327 (Dusenbery DB)
–, responses to pheromones in *Ips* receptor cells 121:343 (Mustaparta H, et al)
–, responses to pheromones of moth single sensilla 121:205 (Otter CJ Den)
–, responses of *Tritonia* mechanoreceptors to chemical stimuli 141:101 (Audesirk G, Audesirk T)
–, responses of turnip beetle larval galeal sensilla to NaCl, glucosinates and glucosides 144:495 (Mitchell BK, Gregory P)
–, salt taste quality discrimination in a fly 133:53 (Maes FW, Bijpost SCA)
–, sugar reception in the cockroach 124:353 (Wieczorek H)
–, sugar reception by an insect water receptor 138:167 (Wieczorek H)
–, sugar receptors in fly taste hairs 149:207 (Wieczorek H, Köppl R)
–, sugar sensitive cell of the red turnip beetle 132:167 (Mitchell BK, Gregory P); 146:393 (Sutcliffe JF, Mitchell BK)
–, taste recordings from catfish ramus recurrens facialis 147:217 (Davenport CJ, Caprio J)
Chemoreceptors, arterial, and duck respiration 133:177 (Bouverot P, et al)
Chemotaxis of nematode mutants 137:93 (Dusenbery DB), 353 (Dusenbery DB, Barr J)
–, two mechanisms in *Paramecium* 127:167 (Houten J Van)

Chicken, see also fowl, *Gallus*
–, membrane lipids of developing heart 125:151 (Kutchai H, et al)
–, N-acetyltransferase in the retina 139:103; 140:181 (Binkley S, et al)
–, neural control of hatching 145:497 (Bekoff A, Kauer JA)
–, nictitating membrane 125:335 (Sivak JG, et al)
–, phosphorylase activity in developing pectoral muscle 141:439 (Wittenberger C, Coprean D)
–, oral responses from the solitary complex 130:259 (Gentle MJ)
–, sound transmission through interaural pathways 136:183 (Rosowski JJ, Saunders JC)
Chipmunk, see *Eutamias*
Chiromantis, temperature insensitive blood O_2 affinity 136:71 (Johansen K, et al)
Chironectes, body temperature and metabolism 125:115 (McNab BK)
Chlamys, energy metabolism and octopine 126:269 (Grieshaber M)
Chloride-dependent ion- and water transport in eel intestine 138:87 (Ando M)
– – volume regulation of toadfish erythrocytes 146:9 (Lauf PK)
– excretion, stress effect on fish gills 123:155 (Pic P)
– extrusion in pinfish isolated gill 141:471 (Farmer LL, Evans DH)
– flux, effect of lanthanum on – in goldfish gill 129:145 (Eddy FB, Bath RN)
– permeability of eel intestine 145:73 (Ando M)
– secretion by fish opercular membrane 145:29 (Mendelsohn SA, et al); 146:27 (Foskett JK, et al)
Chloris, self-sustaining circadian rhythm 139:49; 140:113 (Wever RA)
Cholesterol content of developing chick heart membrane 125:151 (Kutchai H, et al)
Choline acetyltransferase, mutations in *Drosophila* 137:83 (Greenspan RJ)
– – activity in fish swimbladder 146:57 (Fänge R, Holmgren S)
Cholinergic activities in locust CNS 141:271 (Breer H)
– mechanisms, systemic vasculature of trout 122:325 (Wood CM)
– nature of cockroach giant fibers 126:157 (Dagan D, Sarne Y)
– responses in the heart of a clam 129:61 (Elliott EJ)
Chordotonal organ, bi-articular, in rock lobster antennae 145:505 (Rossi-Durand C, Vedel JP)
Chorthippus, stridulatory movements 122:53 (Helversen O von, Elsner N)
Chromatic, see also color, spectral
– aberration of a dipteran corneal lens 146:493 (McIntyre P, Kirschfeld K)
– adaptation in the honeybee 144:543 (Neumeyer C)
– properties of bee optic lobe interneurons 137:215 (Hertel H)
Chrysemis, middle ear sensitivity 127:97 (Moffat AJM, Capranica RR)
–, renal clearance of phosphate and calcium 141:463 (Laverty G, Clark NB)
Chrysopa, avoidance behavior 131:113 (Miller LA, Olesen J), 121 (Olesen J, Miller LA)
Chrysophrys, neural temperature compensation 142:411 (Macdonald JA)
Cicadetta, sound production and hearing 142:271 (Popov AV)
Cilia motor neurons in *Tritonia* 128:259 (Audesirk G)
Ciliary activation, voltage-dependent, in a protozoan 150:223 (Peyer JE de, Machemer H)
Ciliata, see *Paramecium, Stylonychia, Tetrahymena*
Circadian activity rhythm, splitting of cricket – 150:51 (Wiedenmann G)
– clock, isolation of an insect – 149:311 (Fleissner G)
– –, mutant *Drosophila* 122:87 (Winfree AT, Gordon H)
– control of *Rhodnius* ecdysis 147:281 (Ampleford EJ, Steel CGH)
– locomotor activity rhythms in starlings 126:123 (Gwinner E)
– organization in alligators lacking a pineal organ 139:287 (Kavaliers M, Ralph CL)
– – in *Aplysia* 131:169 (Lickey ME, Wozniak JA)
– oscillator, phase resetting of mosquito – 138:201 (Peterson EL)
– pacemaker, development of mouse – 143:527 (Davis FC, Menaker M)
– – in sea hare eye 142:403 (Block GD, Roberts MH)
– periodicity in buntings 144:201 (Tewary PD, Kumar V)
– – in cockroach 146:255 (Roberts SK)
– phase response curves for dark pulses in hamster 146:411 (Boulos Z, Rusak B)
– rhythm of bat shifted by pulses of darkness 127:239 (Subbaraj R, Chandrashekaran MK)
– rhythmicity, overt, in Japanese quail 145:391 (Simpson SM, Follett BK)
– rhythms of finches 139:49; 140:113 (Wever RA)
– –, seasonality in diurnal and nocturnal rodents 128:21 (Kenagy GJ)
– – of sleep and activity in the rat 128:37 (Borbély AA, Neuhaus HU)
– –, splitting in the rat 134:75 (Boulos Z, Terman M)
– spontaneous bioluminescence in *Gonyaulax* 138:19 (Krasnow R, et al)
– system, interactions in the cockroach – 124:225 (Page TL)
Circannual cycles in ground-squirrels 136:349, 355 (Mrosovsky N); 150:233 (Joy JE, Mrosovsky N)
– rhythm, testicular, effect of pinealectomy on starling – 136:345 (Gwinner E, Dittami J)
– rhythms in starlings stop under long photoperiods 146:419 (Gwinner E, Wozniak J)
Circulation, see also blood, heart, hemolymph
–, activation of clam heart cholinergic responses by snail venom 129:61 (Elliott EJ)
–, adrenergic innervation of teleost hearts 147:85 (Donald J, Campbell G)
–, adrenergic control of cod – 137:145 (Wahlqvist I, Nilsson S)
–, blood flow in isolated, perfused toadfish head 149:107 (Oduleye SO, et al), 115 (Oduleye SO, Evans DH)
–, bradycardial response in *Aplysia* 122:311 (Feinstein R, et al)
–, Ca and acidosis of vertebrate myocardium 127:307 (Gesser H, Poupa O)
–, cardiac output and blood flow in lactating rabbit 138:31 (Jones CS, Parker DS)
–, cardioactive peptides of a snail 138:265 (Lloyd PE)
–, cardiovascular adaptation to food-arousal in *Aplysia* 149:31 (Koch UT, Koester J)
–, cardiovascular effects of parathyroid hormone in frogs 147:101 (Strickland ML, et al)
–, cardiovascular responses to exercise in the possum 124:143 (Baudinette RV, et al)
–, catecholamine effects on cod vasculature 137:139 (Wahlqvist I)
–, cholinergic mechanisms and response to ATP in trout systemic vasculature 122:325 (Wood CM)
–, difference in blood oxygen levels in teleostean heart outflow vessels 149:435 (Ishimatsu A, Itazawa Y)
–, drug effects on cod cardio-vascular parameters 137:131 (Pettersson K, Nilsson S)
–, effects of catecholamines on eel arterial blood pressure 129:343 (Peyraud-Waitzenegger M)
–, hemodynamic effects of adenosine on trout gill 130:325 (Colin DA, et al)
–, hemodynamic effects of epinephrine in teleost isolated head 138:79 (Claiborne JB, Evans DH)
–, hemolymph – in the giant silkmoth 145:1 (Wasserthal LT)
–, heart rate of *Aplysia* 123:11 (Dieringer N, et al)
–, heart rates during locomotion in mammals 127:337 (Baudinette RV)
–, hypoxia and plasma catecholamines in dogfish 127:325 (Butler PJ, et al)
–, inotropic effects of adrenaline on anoxic and hypercapnic fish myocardium 147:123 (Gesser H, et al)
– in insect wings 147:27 (Wasserthal LT)
–, latex particles in crayfish hemolymph 132:363 (Merrill DP, et al)
–, nervous control of cod branchial vascular resistance 129:179 (Pettersson, Nilsson S)
–, neural control of leech heartbeat coordination 122:111 (Calabrese RL)

Circulation, oscillating hemolymph – in a butterfly 139:145 (Wasserthal LT)
–, sympathetic control of cod vasculature 144:153 (Wahlqvist I, Nilsson S)
–, sympathetic nervous control of blood flow in cod gills 144:157 (Nilsson S, Pettersson K)
–, vasoactive properties of urotensins in birds 126:193 (Woo NYS, Bern HA)
–, peripheral, in alligators 148:57 (Weinheimer CJ, et al)
Cirolana, anaerobic energy metabolism 129:327 (Zwaan A de, Skjoldal HR)
–, compound eye adapted for low light intensities 143:503 (Nilsson D-E, Nilsson HL)
Citellus, carbohydrate and torpor 147:129 (Zimmerman ML)
Cladocera, see *Acantholeberis, Daphnia*
Clam, see *Mercenaria*
Clotting, see also coagulation
–, hemolymph – in a cockroach 143:169 (Bohn H, et al)
Clubiona, subzero temperature tolerance 131:347 (Duman JG)
Cnemidophorus, postural mechanisms 131:235 (Meyer DL, et al)
–, thermal effects on muscle 147:11 (Putnam RW, Bennett AF)
CO_2 production, anaerobic, in goldfish 149:75 (Thillart G van den, Verbeek R)
– sensitivity of frog intrapulmonary receptors 132:69 (Kuhlmann WD, Fedde MR)
Coagulation, see also clotting
– in decapod Crustacea 142:473 (Ghidalia W, et al)
Cochlear nucleus, coding of sinusoidal modulations in bat – 149:369 (Vater M)
– processing in gecko auditory fibres 142:203 (Eatock RA, et al)
– structure und function in housemouse 122:65 (Ehret G, Frankenreiter M)
Cockle, see *Cardium*
Cockroach, see *Arenivaga, Blaberus, Blaptica, Gromphadorhina, Leucophaea, Periplaneta*
Cod, see *Gadus*
Coelenterata, action potentials and contraction in subumbrellar myoepithelium 144:555 (Bone Q)
–, central control of swimming in *Carybdea* 133:357 (Satterlie RA)
–, electrophysiology of *Chelophyes* myoid epithelium 143:329 (Chain BM, et al)
–, feeding behavior of *Hydra* 142:75 (Koizumi O, Maeda N); 144:503 (Hanai K); 150:99 (Koizumi O, et al), 521 (Kitajima M, Hanai K)
–, glutathione receptor of *Hydra* 137:73 (Hirakawa Y, Kijima H)
–, neuromuscular synapse of *Polyorchis* 148:353 (Spencer AN)
–, neuronal control of locomotion in hydrozoan medusae 150:195 (Satterlie RA, Spencer AN)
–, octopine dehydrogenase function in *Metridium* 143:213 (Walsh PJ)
–, pacemakers and conducting tissues in *Hydra* 128:71 (Kass-Simon G, Passano LM)
–, subumbrellar swimming muscle of *Polyorchis* 144:401 (Spencer AN, Satterlie RA)
–, swimming activity of *Sarsia* 136:219 (Leonard JL)
Cold, effect on mouse activity 123:91 (Barnett SA, et al)
– acclimation, effects on rodent heat production 148:77 (Haim A)
– defense responses in pigeons during sleep and wakefulness 136:77 (Hohtola E, et al)
– hardiness in beetles 140:227 (Zachariassen KE)
– resistance during seasonal acclimatization in Djungarian hamster 149:? (Heldmaier G, et al)
Coleoptera, see also *Anthia, Dendroides, Entomoscelis, Geotrupes, Ips, Lethrus, Photinus, Pteroptyx, Speophyes, Thanasimus*
–, pigment migration in firefly superposition eyes 143:491 (Dreisig H)
–, role of polyols and nucleating agents in freezing tolerance 140:227 (Zachariassen KE)
Colias, red eye glow 132:1 (Ribi WA)
Colinus, ventilatory responses to hypercarbia and hypoxia 149:527 (Boggs DF, Kilgore DL Jr)
–, vasoactive properties of urotensins 126:193 (Woo NYS, Bern HA)
Collocalia, echolocation click production 148:457 (Suthers RA, Hector DH)
Colon, transepithelial transport in domestic fowl – 146:51; 147:65 (Rice GE, Skadhauge E)
Color change, effect of blinding on insect ommochromes 130:331 (Bückmann D)
– –, melanophore potentials in stoneloach 131:13 (Collis CS)
– changes, effects on lizard thermoregulation 135:139 (Rice GE, Bradshaw SD)
– constancy in honeybees 144:543 (Neumeyer C)
– contrast in *Drosophila* vision 130:161 (Fischbach KF)
– – in honeybees 139:165; 144:543 (Neumeyer C)
– discrimination of bees is luminance dependent 141:379 (Rose R, Menzel R)
– – in crabs 133:159 (Leggett LMW)
– – by a hummingbird 130:209 (Goldsmith TH, Goldsmith KM)
– – in dim light by a moth 129:257 (Schlecht P)
– opponent neurons of bees in a heterochromatic flicker test 142:81 (Riehle A)
– patterns, unpolarized, orientation of bees to – 139:225 (Glas HW van der)
– receptors in crab compound eyes 145:549 (Martin FG, Mote MI)
– –, distribution in lepidopteran larval eyes 149:317 (Ichikawa T, Tateda H)
– – in an insect fused rhabdom 123:239 (Schlecht P, et al)
– –, role in behavioural patterns of *Apis* 122:27 (Kaiser W, et al)
– vision, behavioral analysis in an ant 131:217 (Kretz R)
– – in *Drosophila* 150:31 (Hernández de Salomon C, Spatz H-C)
– – in pigeons 141:47 (Emmerton J, Delius JD)
Colossendeis, neural temperature compensation 142:411 (Macdonald JA)
Columba, see pigeon
Comb building by honeybees 147:495 (Jong D De)
Command systems of reflex-evoked behaviors in crayfish 143:27 (Williams BJ, Larimer JL)
Compass orientation in sokeye salmon 137:243 (Quinn TP); 147:547 (Quinn TP, Brannon EL)
– – in toads 144:45 (Adler K, Taylor DH)
Compound eye, crustacean – adapted for low light intensities 143:503 (Nilsson D-E, Nilsson HL)
– –, lateral interactions 132:159 (Marčelja S)
– –, light-dark adaptation in brine shrimp – 143:389 (Nilsson D-E, Odselius R)
– –, role of dorsal frontal part of drone bee – in fixation of the queen 136:263 (Praagh JP van, et al)
– –, role in fly phototaxis 135:85 (Hu KG, Stark WS)
– eyes, relationships to dragonfly ocellar efferent system 125:341 (Kondo H)
– –, sexual dimorphism in fly – 150:379 (Zeil J)
Configuration pattern, key stimulus of toad prey 128:189 (Borchers H-W, et al)
Contractions of holothurian muscles 136:103 (Prosser CL, Mackie GO)
Contrast frequency-dependence of fly visual behavioral responses 145:241 (Eckert H, Hamdorf K)
Conus, venom activating clam heart cholinergic responses 129:61 (Elliott EJ)
Copper, effects on ionic regulation by fish gills 149:83 (Stagg RM, Shuttleworth TJ)
Coprodeum, transepithelial transport in domestic fowl – 146:51; 147:65 (Rice GE, Skadhauge E)
Cordulegaster, ventilation during prey capture 128:341 (Weber T, Caillière L)
Corixa, role of air-bubble resonance in sound reception 148:323 (Prager J, Streng R)
Cormorant, see *Phalacrocorax*
Corn borer, see *Diatraea*
Correlation analysis of toad prey feature detectors 126:43 (Ewert J-P, et al)
Cortex, somatosensory, cells in cat – responding to vibrissae displacement 125:29 (Hellweg FC)
Cortisol, plasma levels in steelhead trout 146:123 (Schmidt SP, House EW)
–, role in tilapia intestinal absorption 146:1 (Mainoya JR)
Corydalus, mechanosensory input on ventilation 149:423 (Fitch GK, Kammer AE)

Coryphaenoides, pressure adaptation of lactate dehydrogenase 129:295 (Siebenaller JF, Somero GN)
Cottus, calcium regulation of actomyosin 129:169 (Johnston IA, Walesby NJ)
Coturnix, formal properties of circadian rhythms 145:381, 391 (Simpson SM, Follett BK)
–, pineal and hypothalamic pacemakers 144:381 (Simpson SM, Follett BK)
–, temperature regulation during exercise 149:519 (Nomoto S, et al)
–, vasoactive properties of urotensins 126:193 (Woo NYS, Bern HA)
Courtship song, neural topography in *Drosophila* sex mosaics 129:85 (Schilcher F von, Hall JC)
– –, neuromuscular basis of *Drosophila* – 130:87 (Ewing AW)
Crab, see *Callinectes, Cancer, Carcinus, Eriocheir, Grapsus, Hemigrapsus, Leptograpsus, Maia, Mictyris, Podophthalmus, Portunus, Scylla, Uca*
Crane fly, see *Tipula*
Crangon, ammonia excretion during moult 133:199 (Regnault M)
–, respiration and ammonia excretion during starvation 141:549 (Regnault M)
Crawling, oxygen consumption and energetic costs during – in gastropods 147:113 (Houlihan DF, Innes AJ)
Crayfish, see *Astacus, Austrapotamobius, Cambaroides, Cambarus, Euastacus, Orconectes, Pacifastacus, Procambarus*
Cricket, see *Acheta, Anurogryllus, Gryllus, Oecanthus, Teleogryllus*
Crimora, neurons controlling gill movements 131:277 (Dickinson PS)
Critical bands in the parakeet 125:359 (Saunders JC, et al)
Crocodylus, lingual salt glands 149:43 (Taplin LE, et al)
–, water and electrolyte homeostasis 144:261 (Grigg GC)
Crop juice esterases, *Cepaea* 122:375; 132:327 (Oxford GS)
– milk feeding, effects on pigeon growth and metabolism 135:97 (Vandeputte-Poma J)
Crustacea, abdominal proprioceptor reflex in *Procambarus* 122:289 (Lunteren E van)
–, acid-base balance of *Astacus* hemolymph 149:463 (Dejours P, Armand J)
–, amino acid sensitive receptors in *Orconectes* legs 144:67 (Bauer U, et al)
–, ammonia excretion in *Callinectes* 141:457 (Kormanik GA, Cameron JN)
–, ammonia excretion of *Crangon* 133:199 (Regnault M)
–, antennal gland of *Callinectes* 123:143 (Cameron JN, Batterton CV)
–, antennal proprioception in *Palinurus* 145:505 (Rossi-Durand C, Vedel JP)
–, aquatic and aerial respiration in *Carcinus* 127:315 (Taylor EW, Butler PJ)
–, canal-receptor properties in *Scylla* 130:101 (Janse C, Sandeman DC)
–, central input to *Procambarus* mechanosensory neuron 134:1 (Marzelli GA, Wilkens LA)
–, chemoreceptor cells in *Homarus* walking legs 146:181 (Derby DC, Atema J)
–, chemosensory interneurons of *Panulirus* 130:63 (Ache BW, Fuzessery ZM)
–, circadian rhythm of *Procambarus* retinal sensitivity 136:313 (Larimer JL, Smith JTF)
–, claw closer muscles in *Alpheus* 132:97 (Stephens PJ, Mellon DeF), 109 (Mellon DeF, Stephens PJ)
–, coagulation in decapods 142:473 (Ghidalia W, et al)
–, color discrimination in *Scylla* 133:159 (Leggett LMW)
–, color receptors of *Callinectes* and *Carcinus* 145:549 (Martin FG, Mote MI)
–, command fiber activation of abdominal flexor motoneurons in *Homarus* 148:515 (Thompson CS, Page CH)
–, compensatory eye reflex in *Scylla* 130:95 (Janse C, Sandeman DC)
–, compound eye adapted for low light intensities in *Cirolana* 143:503 (Nilsson D-E, Nilsson HL)
–, control of compensatory eye responses in *Palinurus* 150:23 (Schöne H, et al)
–, cytoplasmic receptors for molting hormones in *Orconectes* 128:95 (Kuppert P, et al)
–, dark induced membrane changes in *Procambarus* photoreceptors 131:191 (Eguchi E, Waterman TH)
–, displacement-sensitive pathway in *Procambarus* 147:447 (Wiese K, Schultz R)
–, diurnal changes in angular sensitivity of *Scylla* photoreceptors 144:99 (Leggett LMW, Stavenga DG)
–, DNP-induced action potentials in *Procambarus* muscle fibers 125:327 (Moody W Jr)
–, dorsal superficial muscles of *Pagurus* 121:395, 413 (Chapple WD)
–, driver potentials in *Portunus* and *Podophthalmus* cardiac ganglia 149:263 (Berlind A)
–, dual reflex motor control of *Carcinus* muscle receptor 148:365 (Cannone A, Bush BMH)
–, dye coupling and neuronal networks in *Procambarus* brain 140:121 (Glantz RM, Kirk MD)
–, ecdysteroid secretion by *Orconectes* Y-organs 130:347 (Keller R, Schmid E)
–, effect of eyestalk hormones on *Panulirus* gastric mill 141:363 (Fleischer AG)
–, effect of light on *Leptograpsus* rhabdom synthesis 142:19 (Stowe S)
–, effects on *Astacus* stretch receptor 133:257 (Moser H, et al)
–, emersion of *Carcinus* into air 132:305 (Wheatly MG, Taylor EW)
–, energy metabolism of *Cirolana* 129:327 (Zwaan A de, Skjoldal HR)
–, environmental effects on *Callianassa* hemocyanin 143:253, 261 (Miller KI, Holde KE Van)
–, escape behavior of *Procambarus* 121:145 (Wine JJ, Hagiwara G), 173, 187 (Wine JJ); 142:281 (Reichert H, et al)
–, exercise physiology in *Callinectes* 148:111 (Booth CE, et al)
–, eye movements and vertical steering in *Nematoscelis* 137:255 (Land MF)
–, eye muscles of *Procambarus* 121:349 (Mellon DeF Jr)
–, eye-scanning during walking in *Leptograpsus* 124:249 (Sandeman DC)
–, feedback inhibition of *Procambarus* interneurons 149:251 (Fricke RA, et al)
–, freezing resistance in *Mesidotea* 125:165 (Yingst DR)
–, ganglionic activation of *Panulirus* myocardium 139:67 (Kuramoto T, Kuwasawa K)
–, gas transport in *Palaemon* hemolymph 145:21 (Weber RE, Hagerman L)
–, growth of *Procambarus* muscles 124:277 (Bittner GD, Traut DL)
–, hair receptors in *Scylla* statocyst 137:51 (Janse C)
–, heart rate and respiration in *Austropotamobius* 138:67 (Taylor EW, Wheatly MG)
–, hemolymph acid-base changes in *Carcinus* 141:489 (Burnett LE, Johansen K)
–, heterogeneity and dynamics of muscle fiber water 146:113 (Freel RW)
–, hypercapnic acidosis in *Callinectes* 123:137 (Cameron JN)
–, hyperglycemic neurohormone from *Orconectes* sinus gland 141:445 (Keller R)
–, hyperosmotic readjustment of *Hemigrapsus* 128:147 (Bedford JJ, Leader JP)
–, inhibitor effects on *Callinectes* gill ion fluxes 133:219 (Cameron JN)
–, inhibitory neurone in *Eriphia* walking legs 143:111 (Ballantyne D, Rathmayer W)
–, interneurons involved in *Procambarus* abdominal posture 148:159 (Miall RC, Larimer JL)
–, interspecific differences in crayfish homologous behavior 145:471 (Yoshino M, et al)
–, intestinal lysine transport in *Macrobrachium* 124:169 (Brick RW, Ahearn GA)
–, ion fluxes and diffusion potentials in *Cancer* 131:285 (Robinson GD, Potts WTW)
–, ionic requirements for lobster neuron bursting activity 145:191 (Gola M, Selverston A)
–, latex particles in *Orconectes* hemolymph 132:363 (Merril DP, et al)
–, leg coordination during walking in *Jasus* 139:293 (Chasserat C, Clarac F)
–, light-dark adaptation in *Artemia* eye 143:389 (Nilsson D-E, Odselius R)
–, light-dark transformations in *Procambarus* retinula cells 145:179 (Tsutsumi V, et al)
–, load compensation in the abdomen of *Procambarus* 123:349 (Page CH)
–, local interneurons in *Procambarus* abdominal ganglion 149:145 (Reichert H, et al)

Crustacea, locomotion in forward walking *Mictyris* 136:301 (Sleinis S, Silvey GE)
–, locomotion and cuticular stress detector in *Carcinus* 125:79 (Findlay I)
–, long term facilitation in *Procambarus* muscles 144:335 (Jacobs JR, Atwood HL)
–, magnet effect in *Panulirus* and *Palinurus* neuronal oscillators 129:5 (Ayers JL Jr, Selverston AI)
–, membrane turnover in *Grapsus* and *Ocypode* rhabdoms 131:205 (Nässel DR, Waterman TH)
–, motoneuron interactions in *Procambarus* claw control 124:237 (Wiens TJ, Atwood HL)
–, motoneuron pattern formation in *Procambarus* 141:183 (Kirk MD, Glantz RM)
–, NaCl balance in *Callinectes* 123:127 (Cameron JN)
–, neural pathways of reflex-evoked behavior in *Procambarus* 143:27 (Williams BJ, Larimer JL)
–, neural pattern generation in *Cancer* 130:221, 229 (Hermann A)
–, neuromuscular junctions of *Procambarus* 121:223 (Zucker RS, Bruner J)
–, neuromuscular strategies of *Palinurus* locomotion 128:81 (Ayers J, Clarac F)
–, neuromuscular transmission in *Procambarus* 136:89 (Brown TH, Newby NA)
–, neuronal control of locomotion in *Homarus* 123:289 (Ayers JL Jr, Davis WJ)
–, neurosecretory polypeptides in *Orconectes*, *Homarus* and *Callinectes* eyestalks 134:303 (Andrew RD, Saleuddin ASM)
–, olfactory excitation of interneurons in *Panulirus* brain 150:129 (Hamilton KA, Ache BW)
–, olfactory-induced neural activity in *Euastacus* 140:295 (Ache BW, Sandeman DC)
–, opiate effects on *Squilla* defensive response 147:455 (Maldonado H, Miralto A)
–, optical system of *Astacus* eye 135:1 (Vogt K)
–, optics of deep-sea amphipod eyes 145:209 (Land MF)
–, optics of euphausiid eyes 130:49 (Land MF, et al)
–, oscillatory input to *Homarus* motor pattern generators 143:453 (Robertson RM, Moulins M)
–, osmotic shock in *Carcinus* isolated axons 129:365 (Kévers C, et al)
–, oxygen transport in *Astacus* blood 123:105 (Angersbach D, Decker H)
–, pharmacological dissection of *Homarus* neural pattern generator 139:1 (Young RE, et al)
–, photosensitivity of white-eyed *Procambarus* retinular cells 122:273 (Kong K-L, Goldsmith TH)
–, phototaxis of *Synchelidium* 135:243 (Forward RB Jr)
–, pigment migration in *Procambarus* retinula cells 125:91 (Olivo RF, Larsen ME); 144:35 (Frixione E, Aréchiga H)
–, polarization of *Procambarus* statocyst receptors 130:201 (Takahata M, Hisada M)
–, proprioceptive inputs in *Palinurus* and *Jasus* legs 130:251 (Vedel JP, Clarac F)
–, proprioceptors in *Balanus* cirri 123:229 (Clark JV, Dorsett DA)
–, pyridine receptors in *Orconectes* walking leg 148:221 (Hatt H, Bauer U)
–, reflex actions of *Procambarus* oculomotor system 121:367 (Mellon DeF Jr, Lorton ED)
–, reflex antennal movements in *Palinurus* 147:259 (Neil DM, et al), 269 (Barnes WJP, Neil DM)
–, reflexes mediated by *Carcinus* non-impulsive muscle receptor 142:103, 113 (Cannone AJ, Bush BMH)
–, regenerating claw muscle of *Alpheus* 134:17 (Stephens PJ, Mellon DeF Jr)
–, regionalization in the eye of *Leptograpsus* 123:299 (Sandeman DC)
–, repetitive activation of *Scylla* antennular motor units 142:189 (Snow PJ)
–, respiration and ammonia excretion in starving *Crangon* 141:549 (Regnault M)
–, respiration at high temperatures in *Carcinus* 130:309 (Taylor EW, Wheatly MG)
–, responses to hypoxia 122:391 (Taylor EW, et al)
–, retinal acid phosphatase in *Leptograpsus* 149:353 (Couet HG de, Blest AD)
–, rhabdom degradation in white-eyed and wild-type *Procambarus* 148:419 (Hafner GS, et al)
–, rhabdom synthesis in *Leptograpsus* 148:313 (Stowe S)
–, rhythmic burst generation in *Carcinus* ventilatory motoneurons 150:1 (Simmers AJ, Bush BMH)
–, rhythmic pumping in *Balanus* 130:183 (Clark JV)
–, sensitivity of *Panulirus* muscles to acetylcholine and glutamate 138:187 (Lingle C)
–, sensory interneurons in *Procambarus* 148:143 (Sigvardt KA, et al)
–, sinus gland hormones 122:359 (Keller R)
–, sodium balance in *Daphnia* and *Acantholeberis* 129:289 (Potts WTW, Fryer G)
–, sodium regulation in *Holthuisana* 142:451 (Greenaway P)
–, spike generation and modulation in *Pachygrapsus* motor axon 142:309 (Stephens PJ, Atwood HL)
–, statocyst control of *Procambarus* uropod movements 139:243 (Yoshino M, et al)
–, statocyst interneurons in *Procambarus* 149:287, 301 (Takahata M, Hisada M)
–, stomatogastric ganglion of *Panulirus* 122:227 (Mulloney B)
–, substrat orientation in *Palinurus* 126:287 (Scapini F, et al), 293 (Schöne H, et al); 129:217 (Neil DM, et al)
–, subunit heterogeneity in hemocanins 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, sustaining fibers of *Pacifastacus* 146:175; 150:419 (Kirk MD, et al)
–, synaptic excitation in *Portunus* cardiac muscle 143:349 (Benson JA)
–, temperature compensation mechanisms of *Cancer* 128:109 (McMahon B, et al)
–, temperature effects on neuromuscular performance in *Procambarus* and *Orconectes* claws 143:53 (Jacobs JR, Atwood HL)
–, transepithelial voltages across sensory epithelia 134:119 (Thurm U, Wessel G)
–, transferrin in *Cancer* blood 148:101 (Huebers HA, et al)
–, transparent eye of *Hyperia* 147:339 (Nilsson D-E)
–, vascularization of *Procambarus* abdominal nerve cord 143:93 (Brown SK, Sherwood DN)
–, ventilatory pauses in *Cancer* 145:81 (Burnett LE, Bridges CR)
–, ventilatory reflex in *Astacus* 140:193 (Massabuau J-C, et al)
–, vibration transmission through *Uca* walking legs 150:483 (Aicher B, et al)
–, violet receptor in *Procambarus* eye 142:199 (Cummins D, Goldsmith TH)
–, volume regulation of *Hemigrapsus* muscle fibers 128:153 (Leader JP, Bedford JJ)
–, water vibration receptor on *Astacus* antenna 144:533 (Tautz J, et al); 149:409 (Masters WM, et al)
Crustaceans, intertidal, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
Cryptozona, diurnal variations in activities 125:59 (Rajarami Reddy G, et al)
Ctenolabrus, ChAT activity in swimbladder 146:57 (Fänge R, Holmgren S)
Ctenusa, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Cucumaria, muscle contractions 136:103 (Prosser CL, Mackie GO)
Culex, phase resetting of circadian oscillator 138:201 (Peterson EL)
Cupiennius, digestive α-amylases 127:355 (Mommsen TP)
–, hemocyanin 130:283 (Mark J, et al); 140:199 (Markl J)
–, lyriform slit sense organ 125:37 (Barth FG, Bohnenberger J), 45 (Seyfarth E-A); 142:391 (Bohnenberger J); 147:423 (Seyfarth E-A, et al); 148:175 (Barth FG, Geethabali)
–, vibration receptors 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
Cutaneous response to CO_2 exposure in frogs 129:339 (Jackson DC, Braun BA)
–, water loss in lizards 149:25 (Mautz WJ)
Cuticle, changes in chemical and mechanical properties of bee – 126:257 (Thompson PR, Hepburn HR)
Cuticular permeability, seasonal changes in the scorpion 129:319 (Toolson EC, Hadley NF)
– sclerotization in honeybee 145:17 (Andersen SO, et al)
– stress detector (CSD_1) in the crab 125:79 (Findlay I)

Cycloheximide, effects on *Gonyaulax* circadian clock 138:1 (Dunlap JC, et al), 9 (Rensing L, et al)
Cyclostomata, induction of swimming in *Ichthyomyzon* 136:337 (Poon MLT)
–, synaptic inhibition in moto- and interneurons during fictive swimming in *Ichthyomyzon* and *Petromyzon* 147:189 (Kahn JA)
–, synaptic transmission in *Lampetra* spinal interneurons 143:423 (Homma S)
–, trigeminal sensory neurons in *Petromyzon* 123:329 (Matthews G, Wickelgren WO)
Cycnia, auditory sensitivity 129:79 (Fullard JH)
Cygnus, seasonal acclimatization 136:61 (Bech C)
Cyligramma, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Cynomys, evaporative water loss 139:135 (Welch WR)
Cyprinus, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, contractile properties of muscle fibers 149:441 (Granzier HLM, et al)
–, mesencephalic trigeminal neurons 141:157 (Jüch PJW)
–, respiratory neurons in the brain 133:131 (Ballintijn CM, et al)
–, respiratory properties of blood 128:117 (Lykkeboe G, Weber RE), 127 (Weber RE, Lykkeboe G)
Cystisoma, optics of the eyes 145:209 (Land MF)
Cytochalasin, effect on fish gill ionic excretion 141:523 (Pic P, Lahitte P)
Cytoplasmic ecdysteroid receptors in crayfish 128:95 (Kuppert P, et al)

D

Damselfish, see *Eupomacentrus*
Danaus, prerequisites for pheromone production 126:97 (Boppré M, et al)
Daphnia, sodium balance 129:289 (Potts WTW, Fryer G)
Dark recovery, fly photoreceptors 122:215 (Moring J, Järvilehto M)
Dascyllus, calcium regulation of actomyosin 129:169 (Johnston IA, Walesby NJ)
Davea, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Decticus, auditory giant fibre 132:225 (Kalmring K, et al)
–, tibial receptor neurons 127:109 (Kalmring K, et al)
Dehydration, see also water deprivation
– effects on antelope intestinal water balance 135:165 (Skadhauge E, et al)
–, role of oxygen and electrolytes in *Xenopus* 128:169 (Hillman SS)
Deilephila, color discrimination in dim light 129:257 (Schlecht P)
–, color receptors 123:239 (Schlecht P, et al)
–, ion gradient and photoreceptor sensitivity 125:237 (Hamdorf K, et al)
–, retinal pigment migration 143:305 (Hamdorf K, Höglund G)
Dendroides, overwintering survival 136:53 (Duman JG)
Depth vision, role in toad prey localization 131:179 (Lock A, Collett T)
Dermal, see also skin
– reflectivity and vascularity, effects on lizard thermoregulation 135:139 (Rice GE, Bradshaw SD)
Descending contralateral movement detector neuron (DCMD) 135:191 (Bloom JW, Atwood HL)
Desmodus, thermoreception 146:223 (Kürten L, Schmidt U)
Desmognathus, hormonal control of salt balance 132:357 (Brown PS, et al)
Detour behavior of toads 146:261 (Collett TS)
Deutocerebral interneurones in cockroach responding to female pheromone 145:447 (Burrows M, et al)
Deutocerebrum, pheromone sensitive neurons in moth – 132:235 (Boeckh J, Boeckh V)
–, food odour specific neurons in cockroach – 134:159 (Selzer R)
Development of anuran eye optical properties 150:329 (Sivak JG, Warburg MR)
– of bee cuticle 126:257 (Thompson PR, Hepburn HR)
– of cricket auditory system 127:131 (Ball EE, Hill KG)
– of cricket circadian rhythm 147:299 (Tomioka K, Chiba Y)
–, energetics of – in the alpine charr 149:485 (Gruber K, Wieser W)
– of EOD in *Pollimyrus* 127:45 (Westby GWM, Kirschbaum F)
– of fly visual receptor potential 150:529 (Järvilehto M, Finell N)
– of hearing in a bat 126:169 (Brown PE, et al)
– of mouse circadian pacemaker 143:527 (Davis FC, Menaker M)
Diapause, photoperiodic induction in *Sarcophaga* 124:75; 127:197; 132:179 (Saunders DS)
Diatraea, hydrolysis of juvenile hormone in larvae 144:205 (Mane SD, Chippendale GM)
Didelphis, body temperature and metabolism 125:115 (McNab BK)
Diencephalon, respiratory neurons in carp – 133:131 (Ballintijn CM, et al)
Diffusion potentials in a crab 131:285 (Robinson GD, Potts WTW)
Digestion, absorption in rabbit caecal pouch 133:205 (Leng-Peschlow E, Marty J)
–, function of llama tubiform forestomach 132:337 (Engelhardt W v, et al)
Digestive α-amylases from two spider species 127:355 (Mommsen TP)
– cells, responses to nutritional, thermal and exposure stress in *Mytilus* 127:287 (Thompson RJ, et al)
Diglyceride-binding lipoprotein in locust hemolymph 136:1 (Gellissen G, Emmerich H)
Dik-dik antelope, see *Rhynchotragus*
Dilophus, sexual dimorphism in visual system 150:379, 395 (Zeil J)
Dinitrophenol, effect on action potentials in crayfish muscle fibers 125:327 (Moody W Jr)
Dinoflagellate, see *Gonyaulax*, *Noctiluca*, *Pyrocystis*
Dinopis, receptors in the posterior median eye 141:53 (Laughlin S, et al)
Diopatra, properties of erythrocruorins 123:177 (Weber RE, et al)
Diplopoda, gravity and orientation in *Spirostreptus* 133:267 (Mittelstaedt M-L, et al)
Dipodomys, seasonality of circadian rhythms 128:21 (Kenagy GJ)
Dipsosaurus, thermal effects on muscle 147:11 (Putnam RW, Bennett AF)
Diptera, see *Aedes*, *Bibio*, *Boettcherisca*, *Calliphora*, *Culex*, *Dilophus*, *Drosophila*, *Eristalis*, *Eurosta*, *Lucilia*, *Musca*, *Phaenicia*, *Phormia*, *Protophormia*, *Sarcophaga*, *Syritta*, *Tipula*, *Volucella*
Displacement-sensitive pathway, intrasegmental inhibition in crayfish – 147:447 (Wiese K, Schultz R)
Dissostichus, neural temperature compensation 142:411 (Macdonald JA)
Distance estimation, bulldog ant 121:33 (Via SE)
– messages, accuracy in bee dances 123:339 (Esch H)
Disturbance stridulation of insects 135:259 (Masters WM)
Diuresis, osmotic and volume control of – in ducks 146:17 (Simon-Opperman C, Simon E)
–, primary urine formation during – in leech 146:75 (Zerbst-Boroffka I, et al)
Diving, aerobic and anaerobic metabolism during Weddell seal – 138:335 (Kooyman GL, et al)
–, effects on alligator peripheral circulation 148:57 (Weinheimer CJ, et al)
–, recovery from bradycardia in bullfrogs 133:193 (Lillo RS)
DL-α-aminoadipate, effects on synaptic transmission in lamprey spinal interneurons 143:423 (Homma S)
Dobsonfly, see *Corydalus*
Dog, potassium relaxation of smooth muscle 135:357 (Webb RC, Bohr DF)
Dogfish, see *Scyliorhinus*, *Squalus*
Dopamine neuron in *Planorbis* 131:267 (Berry MS, Pentreath VW)
Doppler shift compensation in South Indian bats 139:349 (Schuller G)
Dormancy, low temperature-, in catfish 148:41 (Crawshaw LI, et al)
Dormouse, see *Glis*
Dorsal light response, effect of alarm substance on – 123:281 (Pfeiffer W, Riegelbauer G)

Dragonflies, see also Odonata
–, wingstroke frequency in relation to temperature and body size 144:229 (May ML)
Driver potentials in crab cardiac ganglia 149:263 (Berlind A)
Dromiceius, microspectrophotometry of photoreceptors 144:271 (Sillman AJ, et al)
Drosophila, behavioral plasticity in a mutant 130:271 (Dudai Y)
–, brightness perception in two mutants 133:283 (Reichert H, Bicker G)
–, cellular circadian rhythm in salivary glands 143:229 (Weitzel G, Rensing L)
–, color contrast 130:161 (Fischbach KF)
–, compensation for height in groundspeed control 147:485 (David CT)
–, control of circadian rhythms by different oscillators 127:229 (Engelmann W, Mack J)
–, course control in polarized light 139:177 (Wolf R, et al)
–, courtship song in sex mosaics 129:85 (Schilcher F von, Hall JC)
–, electrophysiology of ocelli 126:15 (Hu KG, et al)
–, firing sequences of motoneurons 123:271 (Harcombe ES, Wyman RJ)
–, flicker response enhancement in the lamina 137:341 (Cosens D, LeBlanc N)
–, flight motor neurons 150:295, 305 (Koenig JH, Ikeda K)
–, genetic dimorphism in taste sensitivity to trehalose 147:433 (Tanimura T, et al)
–, inhibition between motoneurones 144:345 (Tanouye MA, Wyman RJ)
–, juvenile hormone metabolism 132:319 (Klages G, Emmerich H)
–, multiple receptor proteins for sweet taste 141:265 (Tanimura T, Shimada I)
–, mutant lobula plate giant neurons 124:287 (Heisenberg M, et al)
–, neuromuscular basis of courtship song 130:87 (Ewing AW)
–, neurotransmitter mutants 137:83 (Greenspan RJ)
–, ocelli and compound eyes in phototaxis 135:85 (Hu KG, Stark WS)
–, osmotropotaxis 147:479 (Borst A, Heisenberg M)
–, photosensitivity of mutant circadian clock 122:87 (Winfree AT, Gordon H)
–, photostable pigment in R7 125:275 (Kirschfeld K, et al)
–, phototactic behaviour 129:35 (Willmund R)
–, spectral preference 121:241 (Hu KG, Stark WS)
–, spectral sensitivity of photoreceptors 121:289 (Stark WS, et al); 134:95 (Bernard GD, Stavenga DG)
–, temperature-sensitive paralytic mutant 144:409 (Benshalom G, Dagan D)
–, twisted rhabdomeres 133:291 (Smola U, Tscharntke H)
–, 'visual attention' 140:69 (Wolf R, Heisenberg M)
–, visual course control in three dimensions 145:321 (Blondeau J, Heisenberg M)
–, visual learning in a mutant 127:29 (Bicker G, Reichert H); 133:283 (Reichert H, Bicker G)
–, visual orientation 148:471 (Bülthoff H, et al)
–, visual pattern discrimination 146:229 (Mimura K)
–, visual pigments 140:275 (Stark WS, Johnson MA)
–, wavelength discrimination 150:31 (Hernández de Salomon C, Spatz H-C)
–, yaw torque in visual flight orientation 130:113 (Heisenberg M, Wolf R); 140:69 (Wolf R, Heisenberg M)
Drugs, effects on cod circulation 137:131 (Pettersson K, Nilsson S)
Dugesiella, iron metabolism 127:349 (Lee MY, et al)
–, moulting 149:121 (Stewart DM, Martin AW)
Duck, see *Anas*, Pekin duck
Dumetella, catabolic enzymes in pectoralis muscle 141:417 (Marsh RL)
Dye coupling in crayfish brain neuronal networks 140:121 (Glantz RM, Kirk MD)

E

Ear, see also middle ear
–, structure and function of catfish – 144:27 (Popper AN, Tavolga WN)
Ecdysis, circadian control in *Rhodnius* 147:281 (Ampleford EJ, Steel CGH)
– in the tarantula 149:121 (Stewart DM, Martin AW)
Ecdysteroid receptors, cytoplasmic, in crayfish 128:95 (Kuppert P, et al)
Ecdysteroids, secretion by crayfish Y-organs 130:347 (Keller R, Schmid E)
Echinodermata, contractions of holothurian muscles 136:103 (Prosser CL, Mackie GO)
–, metabolic adaptations in *Sclerodactyla* 122:347 (Ellington WR, Hammen CS)
–, pyloric caeca composition of *Asterias* during reproduction 148:49 (Plas AJ van der, Voogt PA)
–, steroid synthesizing capacity of *Asterias* 138:27 (Schoenmakers HJN)
Echolocation in *Asellia* 131:161 (Gustafson Y, Schnitzler HU)
–, brainstem auditory evoked responses in a bat 146:283 (Belknap DB, Suthers RA)
–, click production by the grey swiftlet 148:457 (Suthers RA, Hector DH)
–, effect of moth hearing on bat – 132:77 (Fenton MB, Fullard JH)
–, evolution of bat- 135:61 (Simmons JA, Stein RA)
–, orientation signals of bats during avoidance maneuvers 148:389 (Jen PHS, Kamada T)
–, *Plecotus* 122:201 (Simmons JA, O'Farrell MJ)
–, subglottic pressure during bat – 143:465 (Fattu JM, Suthers RA)
–, *Tadarida* 125:291 (Simmons JA, et al)
–, target detection by a bat 145:431 (Kick SA)
– sounds, adaptive, of a bat 144:559 (Habersetzer J)
Eel, see *Anguilla*
Efferent control in spider eyes 143:477 (Yamashita S, Tateda H)
Egestion, motor program in a mollusc 145:277; 147:143 (Croll RP, Davis WJ)
Egg deposition behavior, role of bag cells in gastropod – 147:523, 537 (Cobbs JS, Pinsker HM)
– laying in *Aplysia*, effect of atrial gland 128:67; 141:131 (Arch S, et al)
– –, wavelength-specific behavior during – in a butterfly 149:325 (Kolb G, Scherer C)
Eigenmannia, electrolocation under jamming 125:285 (Matsubara J, Heiligenberg W)
–, electroreceptive afferents 148:287 (Heiligenberg W, Dye J)
–, electroreceptor tuning 133:317, 327 (Viancour TA)
–, how electroreceptors encode JAR-eliciting stimulus regimes 142:295 (Heiligenberg W, Partridge BL)
–, jamming avoidance response 127:267 (Heiligenberg W, et al); 136:113 (Heiligenberg W, Bastian J), 135 (Bastian J, Heiligenberg W), 153 (Partridge BL, Heiligenberg W)
–, neural basis of a sensory filter in JAR 145:153 (Partridge BL, et al)
–, neural correlates of electrolocation under jamming 149:339 (Matsubara JA)
Elaphe, hypophysectomy and iodine metabolism 131:297 (Wong CC, Chiu KW)
Elasmobranchs, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Electric field, effect of medium salinity on fish 141:277 (Butsuk SV, Bessonov BI)
Electric organ discharge, see also jamming avoidance response
– – –, active phase coupling 128:235 (Langner G, Scheich H)
– – –, development in *Pollimyrus* 122:251; 127:45 (Westby GWM, Kirschbaum F)
– – –, *Hypopomus* 121:53 (Bastian J) 138:173 (Heiligenberg W)
– – –, pacemaker control in gymnotiform electric fish 141:197 (Baker CL Jr.)
– – –, responses of mormyrid fish to complex impedances 145:459 (Meyer JH)
– – –, sex differences in a mormyrid 145:399 (Westby GWM, Kirschbaum F)
– – – sound response in weakly electric fish 143:435 (Kramer B, et al)
– – –, waveform and field stimulation in *Apteronotus* 135:283 (Hoshimiya N, et al)
Electrical coupling between locust photoreceptors 125:13 (Lillywhite PG)

Electroencephalogram (EEG), effect of sleep-deprivation on rat – 133:71 (Borbély AA, Neuhaus HU)
Electrocommunication, role of mormyrid N. mesencephali exterolateralis in – 144:327 (Moller P, Szabo T)
Electrogenic potassium pump of insect sensilla 148:303 (Wieczorek H)
Electrolocation in *Apteronotus* 144:465, 481 (Bastian J)
– of electric fish under jamming 125:285 (Matsubara J, Heiligenberg W); 149:339 (Matsubara JA)
Electrolyte, see also ion
– absorption in rabbit caecal pouch 133:205 (Leng-Peschlow E, Marty J)
– balance in a Saharan lizard 146:81 (Lemire M, et al)
– concentrations in dehydrated antelope intestine 135:165 (Skadhauge E, et al)
– homeostasis in crocodile 144:261 (Grigg GC)
– transport in chicken caeca 147:61 (Rice GE, Skadhauge F)
Electrolytes, role in *Xenopus* dehydration 128:169 (Hillman SS)
Electrophysiology of a myoid epithelium 143:329 (Chain BM, et al)
– of protozoan membrane 146:537 (Wood DC)
Electroreception, ampullary receptors in a fresh water ray 138:225 (Szamier RB, Bennett MVL)
–, ampullary receptors in the sturgeon 138:213 (Teeter JH, et al)
–, calcium effect in the catfish 121:381 (Bauswein E)
–, chemical synapse in catfish receptors 126:147 (Roth A)
–, coding for moving objects by *Apteronotus* receptors 144:465 (Bastian J)
–, effect of freshwater ions and skin potential on catfish receptor sensitivity 147:329 (Roth A)
–, electrolocation under jamming 125:285 (Matsubara J, Heiligenberg W)
–, evaluation of electroreceptive feedback in *Hypopomus* 138:173 (Heiligenberg W)
–, frequency response dependent on receptor location 121:53 (Bastian J)
–, frequency response characteristics of *Gymnotus* receptors 134:191 (Watson D, Bastian J)
–, how receptors encode JAR-eliciting stimulus regimes 142:295 (Heiligenberg W, Partridge BL)
–, integration of sensory information in *Apteronotus* optic tectum 147:287 (Bastian J)
–, ionic composition in catfish ampulla of Lorenzini 126:115 (Okitsu S, et al)
–, jamming avoidance response in gymnotoid pulse-species 124:211 (Heiligenberg W, et al)
–, neural correlates of *Eigenmannia*'s JAR 136:135 (Bastian J, Heiligenberg W)
–, neurons in posterior lateral line lobe of *Apteronotus* responding to moving objects 144:481 (Bastian J)
–, nucleus praeeminentialis in catfish brainstem 145:299 (Tong SL)
–, physiological cell types in electric fish lateral line lobes 149:339 (Matsubara JA)
–, receptor organ tuning in *Eigenmannia* 133:317, 327 (Viancour TA)
–, representation in catfish cerebellum 145:289 (Tong SL, Bullock TH)
–, sensory control of EOD pacemaker in electric fish 141:197 (Baker CL Jr.)
–, statistics of catfish receptor sensitivity 137:273 (Bretschneider F, et al)
–, synaptic transmission in catfish ampullary receptor 142:371 (Teeter JH, Bennett MVL)
– in *Xenomystus* 148:345 (Bullock TH, Northcutt RG)
Electroreceptive afferences, control of *Eigenmannia*'s pacemaker by – 136:113 (Heiligenberg W, Bastian J)
– afferents in gymnotoid fish 148:287 (Heiligenberg W, Dye J)
Electroreceptor operation, effect of calcium on – 121:381 (Bauswein E)
– variability in *Hypopomus* 121:53 (Bastian J)
Electroretinography of fly ocelli 126:15 (Hu KG, et al)
Electrotonic coupling among snail neurons 131:267 (Berry MS, Pentreath VW)
Eleutherodactylus, behavioral refractory period 148:337 (Narins PM)
–, effects of noise on vocal response 147:439 (Narins PM)
–, two-note call 127:1 (Narins PM, Capranica RR)
Emberiza, circadian periodicity and gonadal growth 144:201 (Tewary PD, Kumar V)
Embiotoca, fetal and maternal erythrocytic organic phosphates 144:253 (Ingermann RL, Terwilliger RC)
–, oxygen affinities of maternal and fetal hemoglobins 142:523 (Ingermann RL, Terwilliger RC)
Emu, see *Dromiceius*
Endolymph, element composition in cats, lizards and skates 126:1 (Peterson SK, et al)
Endotherms, evaporative water loss 139:135 (Welch WR)
Endothermy in the silkworm moth 129:315 (Ploye H)
Endotoxemia, seasonal differences in fowl responses to – 134:287 (Merrill GF, et al)
Energetic costs of bee foraging 148:297 (Waddington KD)
– – of crawling in gastropods 147:113 (Houlihan DF, Innes AJ)
– – of running in ant workers 137:151 (Jensen TF, Holm-Jensen I)
Energetics of charr development 149:485 (Gruber K, Wieser W)
– of cricket singing 143:199 (Prestwich KN, Walker TJ)
– in neotropical marsupials 125:115 (McNab BK)
– for salamander activity 128:139 (Preslar AJ III, Hutchison VH)
Energy expenditure in a behavioral sequence of a dragonfly larva 127:89 (Etienne AS)
Energy metabolism, activities of enzymes of – in fish hearts 149:67 (Driedzic WR, Stewart JM)
– –, carbohydrate and lipid catabolism in a planarian 146:107 (Barrett J, Butterworth PE)
– –, dependence of bee life span on – 146:35 (Neukirch A)
– – in fish white muscle 141:425 (Driedzic WR, et al)
– –, gluconeogenesis in anaerobic invertebrates 149:477 (Mustafa T, et al)
– – of a honeyeater 137:157 (Collins BG, et al)
– – during hypoxia in whelk ventricle 142:457 (Ellington WR)
– – in an isopod 129:327 (Zwaan A de, Skjoldal HR)
– – of jumping cockle foot muscle 137:177 (Gäde G)
– –, octopine in scallop muscle 126:269 (Grieshaber M)
– – of rat skeletal muscle 142:465 (Nicol CJM, Johnston IA)
– – in the rock hyrax 131:303 (Rübsamen K, et al)
– –, role of carbohydrate on torpor duration in ground squirrel 147:129 (Zimmerman ML)
– –, role of strombine formation on – of mussel adductor muscle 149:557 (Zwaan A de, et al)
– –, squid mantle muscle 123:169 (Storey KB, Storey JM)
– –, ventilatory pauses in a crab 145:81 (Burnett LE, Bridges CR)
– –, anaerobic, of the eel 149:469 (Waarde A van, et al)
– –, –, of goldfish 136:45; 146:41 (Thillart G van den, et al)
– –, –, of sea mussel muscle 149:137 (Zwaan A de, et al)
Energy production in lugworm at different oxygen concentrations 149:547 (Schöttler U, et al)
– – during swimming in a bivalve mollusc 129:361 (Baldwin J, Lee AK)
Enmonodia, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Enophrys, electric field 141:277 (Butsuk SV, Bessonov BI)
Enoplus, phototaxis 134:85 (Burr AH)
Ensatina, activity metabolism 129:309 (Hillman SS, et al)
Ensifera, physical properties of the auditory organs 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al), 217 (Larsen ON, Michelsen A)
Entomoscelis, chemosensitive cells in larval galeal sensilla 144:495 (Mitchell BK, Gregory P)

Entomoscelis, sugar sensitive cell 132:167 (Mitchell BK, Gregory P); 146:393 (Sutcliffe JF, Mitchell BK)
Enzymes, activities of – of energy metabolism in fish hearts 149:67 (Driedzic WR, Stewart JM)
–, activity of ChAT in fish swimbladder 146:57 (Fänge R, Holmgren S)
–, alanopine dehydrogenase in periwinkle foot muscle 149:57 (Plaxton WC, Storey KB)
–, choline acetyltransferase mutations in *Drosophila* 137:83 (Greenspan RJ)
–, development of phosphorylase activity in chick muscle 141:439 (Wittenberger C, Coprean D)
–, digestive α-amylases from two spider species 127:355 (Mommsen TP)
–, effect of low temperature acclimation on activities in overwintering gall fly larva 144:191 (Storey KB, Storey JM)
–, effect of starvation on activity of glycolytic and gluconeogenic – in plaice 136:31 (Moon TW, Johnston IA)
–, esterases in snail crop juice 122:375; 132:327 (Oxford GS)
–, branchial transport – in a gobiid teleost 145:51 (Doneen BA)
–, glycogen phosphorylase in insect pupal fat body 131:321 (Ziegler R, et al)
–, glycogen phosphorylase in sea mussel muscle 148:27 (Ebberink RHM, Salimans M)
–, 3β-hydroxysteroid dehydrogenase activity of starfish ovaries 138:27 (Schoenmakers HJN)
–, interspecific variation in K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, intracellular pH and pyruvate K_m conservation in LDHs 125:129 (Yancey PH, Somero GN)
–, isozymes and allozymes of teleost glucose-phosphat isomerase 138:49 (Palumbi SR, et al)
–, kynurenine 3-hydroxylase in *Ephestia* eggs 141:451 (Stratakis E)
–, N-acetyltransferase in chick retina 139:103; 140:181 (Binkley S, et al)
–, Na-ATPase and NaK-ATPase activities in trout gills 124:97 (Pfeiler E)
–, Na^+K^+ATPase activity in flounder gills 147:93 (Stagg RM, Shuttleworth TJ)
–, (Na-K)-ATPase activity in tortoise intestine 129:355 (Gilles-Baillien M)
–, octopine dehydrogenase function in a sea anemone 143:213 (Walsh PJ)
–, phosphokinases in *Tubifex* 143:237 (Hoffmann KH)
–, potassium sensitive ATPases in fly labellum 148:303 (Wieczorek H)
–, pressure adaptation of fish lactate dehydrogenases 129:295 (Siebenaller JF, Somero GN)
–, purine nucleotide cycle in *Helix* hepatopancreas 129:137 (Campbell JW, Vorhaben JE)
–, pyruvate carboxylase from trout liver 143:281 (Suarez RK, Hochachka PW)
–, pyruvate kinase function in tuna hot and cold organs 129:185 (Guppy M, Hochachka PW)
–, retinal acid phosphatase in a crab 149:353 (Couet HG de, Blest AD)
–, role in *Tubifex* anaerobic energy metabolism 130:337 (Hoffmann KH, et al)
–, strain difference in mouse glyceraldehyde-3-phosphate dehydrogenase activity rhythm 148:137 (Peleg L, et al)
–, temperature effects upon trout – 123:97 (Hazel JP, et al)
–, transaminase reactions and glutamate dehydrogenase in gastropod hepatopancreas 129:129 (Sollock RL, et al)
–, trehalose absorption in developing silkworm ovaries 131:333 (Shimada S, Yamashita O)
–, tryptophan 2,3 dioxygenase in the blowfly 124:117 (Schartau W)
–, tryptophan 2,3-dioxygenase in the stick insect 132:351 (Stratakis E, Schartau W)
– in the tryptophan to nicotinamide adenine dinucleotide pathway of mice 124:189 (Shetty AS, et al)
–, urea-requiring lactate dehydrogenases in fishes 125:135 (Yancey PH, Somero GN)
–, catabolic, in catbird pectoralis muscle 141:417 (Marsh RL)
–, glycolytic, effect of arginine phosphate and octopine on *Sepia* – 142:501 (Storey KB)
–, urea cycle –, in a lizard 140:261 (Baby TG, Reddy SRR)
EOD, see electric organ discharge
Ephestia, kynurenine 3-hydroxylase in eggs 141:451 (Stratakis E)
Epidermal cell cycle during *Pieris* last larval instar 136:11 (Lhonoré J, et al), 21 (Beydon P, et al)
Epinephrine, effects on teleost chloride secretion 146:27 (Foskett JK)
–, hemodynamic effects in teleost isolated, perfused head 138:79 (Claiborne JB, Evans DH)
Eptesicus, acoustic behavior in the filed 142:67 (Miller LA, Degn HJ)
–, inferior collicular neuron responses 146:423 (Jen PHS, Suthers RA); 147:351 (Jen PHS, Schlegel PA)
–, orientation signals during avoidance maneuvers 148:389 (Jen PHS, Kamada T)
–, selective laryngeal neurotomy and phonation 145:529 (Suthers RA, Fattu JM)
–, subglottic pressure during echolocation 143:465 (Fattu JM, Suthers RA)
–, target detection 145:431 (Kick SA)
Equilibrium detecting system of the cricket 150:141 (Sakaguchi DS, Murphey RK)
Erinaceus, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Eriocheir, sinus gland hormones 122:359 (Keller R)
Eriphia, inhibitory neurone in walking legs 143:111 (Ballantyne D, Rathmayer W)
Eristalis, computation of interception course 125:191 (Collet TS, Land MF)
–, spectral sensitivity of photoreceptors 134:95 (Bernard GD, Stavenga DG)
Erythrocruorin, oxygen equilibria and ligand-binding kinetics in polychaetes 123:177 (Weber RE, et al)
Erythrocytes, chloride dependent volume regulation of toadfish – 146:9 (Lauf PK)
–, hemoglobin-oxygen affinity in mouse embryos 129:333 (Wells RMG)
Erythrocytic organic phosphates, role in seaperch maternal-fetal oxygen transport 144:253 (Ingermann RL, Terwilliger RC)
Escape behavior of the cockroach 128:193 (Camhi JM, Tom W), 203 (Camhi JM, et al); 142:339 (Camhi JM, Nolen TG), 347 (Plummer MR, Camhi JM); 147:471 (Dagan D, Volman S)
– –, crayfish 121:145 (Wine JJ, Hagiwara G), 173, 187 (Wine JJ); 142:281 (Reichert H, et al)
– response, octopine accumulation in *Pecten* tissues during – 124:121 (Gäde G, et al)
– –, physiological and biochemical aspects of scallop – 137:97 (Thompson RJ, et al), 105 (Zwaan A de, et al)
– swimming, energy metabolism and octopine in scallop muscle during – 126:269 (Grieshaber M)
– –, role of interneurons in *Tritonia* 121:325 (Getting PA)
– system, recovery from lesions in – of cockroach 146:291, 299 (Vardi N, Camhi JM)
Esox, photosensory function of pineal organ 144:127 (Falcón J, Meissl H)
–, response of minnow to strikes by – 147:371 (Webb PW)
Esterases, *Cepaea* crop juice – 122:375; 132:327 (Oxford GS)
Ethanol, effect on *Gonyaulax* glow rhythm 130:355 (Taylor W, et al)
Euastacus, olfactory-induced neural activity 140:295 (Ache BW, Sandeman DC)
Eudyptula, thermoregulation 148:93 (Stahel CD, Nicol SC)
Eugerres, torus longitudinalis 150:39 (Northmore DPM, et al)
Eupentacta, muscle contractions 136:103 (Prosser CL, Mackie GO)
Euphausia, optics of the eye 130:49 (Land MF, et al)
Euphausiids, optical geometry of eyes 130:49 (Land MF, et al)
Eupomacentrus, auditory signal detection among closely related species 140:135 (Myrberg AA Jr, Spires JY)
Eurosta, cryoptrotectant polyol metabolism in larvae 149:495 (Storey JM, Storey KB)
–, low temperature metabolism in overwintering larva 144:183 (Storey KB, et al), 191 (Storey KB, Storey JM)
Eurycea, magnetic field and orientation 121:273 (Philips JB)

Eurypelma, acid-base status in hemolymph 134:331 (Loewe R, Brauer de Eggert H)
–, hemocyanin subunits 130:283 (Markl J, et al)
–, oxygen binding of hemocyanin 128:161 (Loewe R)
–, oxygen transport in blood 123:113 (Angersbach D)
Eutamias, endogenous annual rhythms 141:369 (Kenagy GJ)
–, thermoregulation 125:175 (Chappell MA, et al)
Eutherians, heart rate during locomotion 127:337 (Baudinette RV)
Euthynnus, pyruvate kinase functions 129:185 (Guppy M, Hochachka PW)
Evaporation in endotherms, effects of temperature and humidity 139:135 (Welch WR)
–, respiratory, in fowl 145:63 (Brackenbury J, et al)
Evaporative water loss in lizards 149:25 (Mautz WJ)
– – – in rodents 128:177 (Edwards RM, Haines H)
Evarcha, movement detection in posterolateral eyes 124:15 (Duelli P)
e-vector orientation in bees 125:1 (Rossel S, et al)
Evolution of bat echolocation 135:61 (Simmons JA, Stein RA)
– of fish sarcoplasmic reticulum temperature adaptation 135:157 (McArdle HJ, Johnston IA)
Excitability changes, K-induced, in *Paramecium* ciliary reversal 127:39 (Hildebrand F)
Excitation of cockroach giant interneurons during walking 138:231, 241 (Daley DL, Delcomyn F)
Excretion, antennal gland in the crab 123:127 (Cameron JN)
–, body water homeostasis in the leech 127:343 (Zerbst-Boroffka I)
–, effects of aldosterone on frog urea cycle enzymes 134:359 (Johnston JW, Jungreis AM)
–, kidney and bladder function in a treefrog 133:211 (Shoemaker VH, Bickler PE)
–, Na/NH_4 exchange in perfused trout gill 124:181 (Payan P)
–, nitrogen catabolism in starving and water deprived ground squirrels 149:565 (Bintz GL, Strand CE)
–, stress effect on Na and Cl – in fish gills 123:155 (Pic P)
– of volatile fatty acids in *Mytilus* 123:163 (Kluytmans JH, et al)
–, ammonia –, during starvation in a shrimp 141:549 (Regnault M)
–, –, of sand-shrimp 133:199 (Regnault M)
–, –, in a seawater crab 141:457 (Kormanic GA, Cameron JN)
–, ionic, effect of cytochalasin on fish gill – 141:523 (Pic P, Lahitte P)
–, water and salt –, in the leech 139:97 (Wenning A, et al)
–, xanthine –, in a desert scorpion 142:423 (Yokota SD, Shoemaker VH)
Exercise, cardiovascular responses in the possum 124:143 (Baudinette RV, et al)
–, control of breathing in ducks during – 147:107 (Kiley JP, et al)
–, effect on lizard lactate and glycogen metabolism 147:79 (Gleeson TT)
–, effects on oxygen uptake and transport in crab hemolymph 148:111 (Booth CE, et al)
–, effect on turtle ventilation and metabolic rate 134:315 (Jackson DC, Prange HD)
–, increases in shark arterial blood oxygen during – 147:41 (Bushnell PG, et al)
–, temperature regulation in quail during – 149:519 (Nomoto S, et al)
– training in fish muscle 135:147 (Johnston IA, Moon TW)
Exhaustion, recovery from – in lungless salamander 128:101 (Feder ME, Olsen LF)
Experience, individual, role in toad prey selection 126:105 (Ewert J-P, Kehl W)
Extatosoma, control of femur-tibia-joint 132:209 (Bässler U, Pflüger HJ)
Extraocular perception of celestial cues in the salamander 124:357 (Taylor DH, Adler K)
– photoreception in a turtle 140:173 (Meissl H, Ueck M)
– photoreceptors, *Aplysia* rhinophores as – 136:257 (Jacklet JW)
– – on lepidopteran genitalia 148:483 (Arikawa K, Aoki K)
– – and photoorientation in pond snail 149:363 (Duivenboden YA van)
Extraretinal photoreception in alligators 136:243 (Kavaliers M)
– photoreceptors in vertebrate brains 130:277 (Hartwig HG, Veen T van)
Eye, transparent, of an amphipod 147:339 (Nilsson D-E)
– cleaning behavior, sensory mechanisms of cricket – 129:247 (Honegger H-W, et al)
– closure and retinal ganglion cell responses in the toad 125:301 (Borchers H-W, Ewert J-P)
– glow, red, in pierid butterflies 132:1 (Ribi WA)
– movements in euphausiid crustaceans 137:255 (Land MF)
– –, evoked by target movement in the crab visual field 123:299 (Sandeman DC)
– –, responses in teleostean torus longitudinalis related to – 150:39 (Northmore DPM, et al)
– muscles, anatomy and motor nerve distribution in *Procambarus* 121:349 (Mellon DeF Jr)
– positions, interaction between commands and reflexes in fishes 128:241 (Graf W, Meyer DL)
– reflex, compensatory, in *Scylla* 130:95 (Janse C, Sandeman DC)
– scanning during walking in the crab 124:249 (Sandeman DC)
– stabilization in *Nautilus* 132:117 (Hartline PH, et al)
Eyestalk, neurosecretory polypeptides in crustacean – 134:303 (Andrew RD, Saleuddin ASM)
– hormones, effect on lobster gastric mill 141:363 (Fleischer AG)
– movements, compensatory, control of – in a lobster 150:23 (Schöne H, et al)
– responses to substrate tilt in the lobster 126:287 (Scapini F, et al)

F

Fat body, glycogen phosphorylase in silkmoth pupal – 131:321 (Ziegler R, et al)
– hypertrophy, effect of pinealectomy on – in white-footed mouse 144:145 (Glass JD, Lynch GR)
Fatty acid absorption in rabbit caecal pouch 133:205 (Leng-Peschlow E, Marty J)
– – turnover in temperature acclimated trout membranes 149:11 (Hazel JR, Neas NP)
– acids, volatile, in *Mytilus* 123:163 (Kluytmans, et al)
Fear, effect on alligator blood flow 148:57 (Weinheimer CJ, et al)
Feedback, electroreceptive, in *Hypopomus* 138:173 (Heiligenberg W)
–, proprioceptive, patterning of fly motor output by – 134:177 (Heide G)
– loop in frog vestibular system 133:63 (Caston J, Gribenski A)
– reflex, positive, to non-impulsive muscle receptor in crabs 142:103 (Cannone AJ, Bush BMH)
Feeding, effect of crop milk feeding on pigeon – 135:97 (Vandeputte-Poma J)
–, effects of photoperiods on daily patterns of – in the rat 124:1 (Borbély AA, Neuhaus HU)
–, food arousal and biting in *Aplysia* 123:31 (Susswein AJ, et al)
–, role of glutathione receptor in *Hydra* 137:73 (Hirakawa Y, Kijima H)
–, role of oral mechanoreceptors in *Tritonia* 130:79 (Audesirk TE, Audesirk GJ)
–, periodic, entrainment to – in suprachiasmatic lesioned rats 143:401 (Stephan FK)
– behavior, motor program switching in gastropod – 145:277 (Croll RP, Davis WJ)
– –, reaction chain in *Hydra* – 150:99 (Koizumi O, et al)
– –, reciprocal inhibition between – and withdrawal behavior in *Pleurobranchaea* 139:77 (Kovac MP, Davis WJ)
– –, selective and differential learning in a gastropod – 138:157 (Davis WJ, et al.)
– preference, role of carbohydrate reserves in fly – 139:59 (Rachman NJ)
– reaction, *Phormia* 121:115 (Pollack GS)
– response, components elicited by trypsin in *Hydra* – 150:521 (Kitajima, M, Hanai K)

Feeding response, quantitative analysis of *Hydra* – 144:503 (Hanai K)
– rhythms in a vole 127:215 (Daan S, Slopsema S)
– threshold, rising of – in satiated *Hydra* 142:75 (Koizumi O, Maeda N)
Femur, sensory innervation in *Carausius* 121:99 (Bässler U)
– -tibia-joint of a phasmid 132:209 (Bässler U, Pflüger HJ)
Femoral chordotonal organ, effect on insect leg movements 134:173 (Bässler U)
Field potential analysis in fly visual system 126:297 (Zimmerman RP)
Finch, see *Carduelis, Chloris, Fringilla, Poephila*
Firefly, see *Photinus, Pteroptyx*
Fish, see Pisces
Flashing, control of – in fireflies 144:277, 287 (Buck J, et al)
Flatworm, see Platyhelminthes
Fleshfly, see *Boettcherisca*
Flicker response enhancement in fly lamina 137:341 (Cosens D, LeBlanc N)
Flight and flight control in a butterfly 145:249 (Gewecke M, Niehaus M), 257 (Niehaus M)
–, kinematic and aerodynamic parameters in tethered siskins 127:123 (Woike M, Gewecke M)
–, muscle stimulation during – in locust 128:57 (Möhl B, Nachtigall W)
–, neuronal activity during locust – 145:311 (Robertson RM, Pearson KG)
–, role of wind-sensitive interneuron in locust – 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
–, gliding, of *Petaurus* 133:89, 339 (Nachtigall W)
–, natural, of locusts 131:79, 89 (Baker PS, Cooter RJ), 141:233 (Baker PS, et al)
–, voluntary, optomotor system during – of a hoverfly 138:271 (Collett TS)
– activity in cockroach mediated by dorsal giants 147:313 (Ritzmann RE, et al)
– attitude in locusts 141:233 (Baker PS, et al)
– behaviour, sexual dimorphism in fly – 150:395 (Zeil J)
– equilibrium, ocellar component of control of dragonfly – 141:335 (Stange G)
– motoneurons, connections with locust wing tegulae 133:299 (Kien J, Altman JS)
– – in *Drosophila* 150:295, 305 (Koenig JH, Ikeda K)
– –, inhibition between fly – 144:345 (Tanouye MA, Wyman RJ)
– motor, influence of modulated air current on locust – 150:427 (Horsmann U, et al)
– – pattern, development of *Manduca* – 130:29 (Kammer AE, Kinnamon SC)
– – patterning in crane fly 134:177 (Heide G)
– muscle activity in lacewing avoidance behavior 131:121 (Olesen J, Miller LA)
– orientation, visual, in *Drosophila* 130:113 (Heisenberg M, Wolf R)
– paralysis in a temperature-sensitive *Drosophila* mutant 144:409 (Benshalom G, Dagan D)
– performance, effect on bee life span 146:35 (Neukirch A)
– speed in locust natural flight 141:233 (Baker PS, et al)
Flounder, see *Platichthys, Pleuronectes, Pseudopleuronectes*
Fly, see Diptera
FMRfamide catch contractures of molluscan smooth muscle 148:491 (Painter SD)
Food arousal, cardiovascular adaptations to – in *Aplysia* 149:31 (Koch UT, Koester J)
– deprivation, see starvation
– intake, short-term control in a slug 124:37 (Senseman DM)
– odor, cockroach antennal receptors responding to – 128:227 (Sass H); 134:159; 144:509 (Selzer R)
– –, orientation to – in a snail 136:267 (Croll RP, Chase R)
Foraging movements on vertical inflorescences of bumblebees 134:113 (Waddington KD, Heinrich B)
Forestomach, tubiform, of the llama 132:337 (Engelhardt W v, et al)
Forewings, locust – as generators of aerodynamic forces 142:127 (Nachtigall W), 135 (Pfau HK, Nachtigall W)
Formica, energetic costs of running 137:151 (Jensen TF, Holm-Jensen I)
Fovea, acoustic, in horseshoe bat 132:47 (Schuller G, Pollak G)
Foveal fixation in a praying mantis 139:307 (Rossel S)
Fowl, see also chicken, *Gallus*
–, caecal function 147:61 (Rice GE, Skadhauge E)
–, colonic and coprodeal function 146:51; 147:65 (Rice GE, Skadhauge E)
Freeze tolerance in beetle larvae 136:53 (Duman JG)
– –, cryoprotectant polyol metabolism in gall fly larvae 149:495 (Storey JM, Storey KB)
Freezing resistance in an Arctic subtidal isopod 125:165 (Yingst DR)
– tolerance, role of polyols and nucleating agents in beetle – 140:227 (Zachariassen KE)
Frequency response characteristics of *Gymnotus* electroreceptors 134:191 (Watson D, Bastian J)
– sensitivity, cricket auditory system 121:79 (Hill KG, Boyan GS)
Fringilla, self-sustaining circadian rhythm 139:49; 140:113 (Wever RA)
Frisch, Karl von November 20, 1886-June 12, 1982 147:417
Frog, see *Physalaemus, Rana*, Treefrog
Fundulus, adrenergic regulation of chloride secretion 145:29 (Mendelsohn SA, et al)
–, Na and Cl excretion by the gills 123:155 (Pic P)
–, role of glucosephosphate isomerase 138:49 (Palumbi SR, et al)

G

Gadus, adrenergic control of circulation 137:145 (Wahlqvist I, Nilsson S)
–, catecholamine effects on vasculature 137:139 (Wahlqvist I)
–, ChAT activity in swimbladder 146:57 (Fänge R, Holmgren S)
–, directional hearing in the median vertical plane 122:1 (Hawkins AD, Sand O)
–, drug effects on circulation 137:131 (Pettersson K, Nilsson S)
–, innervation of the iris 138:149 (Nilsson S)
–, nervous control of branchial vascular resistance 129:179 (Pettersson K, Nilsson S)
–, peripheral innervation of fast myotomal muscle fibres 143:123 (Altringham JD, Johnston IA)
–, salt balance 124:157 (Fletcher CR)
–, sympathetic control of gill blood flow 144:157 (Nilsson S, Pettersson K)
–, sympathetic control of tail vasculature 144:153 (Wahlqvist I, Nilsson S)
–, three-dimensional directional hearing 150:175 (Buwalda RJA, et al)
–, water balance 124:149 (Fletcher CR)
Galago, variations in oxygen consumption 126:241 (Perret M)
Galapagos iguana, see *Amblyrhynchus*
Galathea, coagulation 142:473 (Ghidalia W, et al)
Galeal sensilla, chemosensitive cells in turnip beetle larval – 144:495 (Mitchell BK, Gregory P)
Gall fly, see *Eurosta*
Gallus, see also chicken, fowl
–, auditory midbrain responses 134:241 (Coles RB, Aitkin LM)
–, respiratory evaporation 145:63 (Brackenbury J, et al)
–, seasonal differences in endotoxemia 134:287 (Merrill GF, et al)
Ganglion, prothoracic, cricket auditory neurons 126:183 (Popov AV, et al)
–, stomatogastric, see stomatogastric ganglion
Garter snake, see *Thamnophis*
Gas bubble function in a backswimmer 142:515 (Wells RMC, et al)
– exchange, *Morelia* 122:403 (Donelly P, Woolcock AJ)
– – in the water snake 127:299 (Gratz RK)
– –, respiratory, in the dogfish 132:289 (Short S, et al)
– secretion, activity of ChAT in fish swimbladder 146:57 (Fänge R, Holmgren S)
– –, limits by salting-out effect in fish swimbladder rete 146:129 (Gerth WA, Hemmingsen EA)
Gastric mill, effect of eyestalk hormones on lobster – 141:363 (Fleischer AG)
– system, *Panulirus* stomatogastric ganglion 122:227 (Mulloney B)
Gastropoda, see *Aplysia, Ariolimax, Buccinum, Cepaea, Helix, Limax, Littorina, Lymnaea, Planorbis, Planorbarius, Tritonia, Viviparus*

Gekko, auditory fibre activity 142:203 (Eatock RA, et al), 219 (Eatock RA, Manley GA)
–, labile visual pigments 138:121 (Crescitelli F)
–, lung compliance 138:321 (Perry SF, Duncker H-R)
–, postural mechanisms 131:235 (Meyer DL, et al)
Genetic analysis of mouse circadian rhythms 139:121 (Possidente B, Hegmann JP)
– dimorphism of fly trehalose sensitivity 147:433 (Tanimura T, et al)
Geotrupes, turning and righting 136:279 (Frantsevich LI, Mokrushov PA)
Gerbil, see *Meriones*, *Psammomys*
Gerrhonotus, composition of inner ear lymph 126:1 (Peterson SK, et al)
–, thermal effects on muscle 147:11 (Putnam RW, Bennett AF)
Gerris, walking and rowing 123:43, 51 (Bowdan E)
Geukensia, FMRfamide catch contractures of smooth muscle 148:491 (Painter SD)
Giant fibers in fly lobula plate 126:57 (Eckert H, Bishop LG)
– interneuron, see interneuron
– neuron in bush cricket auditory system 132:225 (Kalmring K, et al)
Gibbula, oxygen consumption during crawling 147:113 (Houlihan DF, Innes AJ)
Gill, chloride extrusion in pinfish – 141:471 (Farmer LL, Evans DH)
–, effect of calcium on ionic transport in fish – 141:511 (Pic P, Maetz J)
–, effect of cytochalasin on ionic excretion in fish – 141:523 (Pic P, Lahitte P)
–, haemodynamic effect of adenosine on trout – 130:325 (Colin DA, et al)
–, hypoxic responses in trout secondary lamellae 145:37 (Soivio A, Tuurala H)
–, innervation in the cod 129:179 (Pettersson K, Nilsson S)
–, mechanoreception in lateral ciliated cells of *Mytilus* – 145:351 (Murakami A, Machemer H)
–, Na^+, K^+ATPase activity in flounder – 147:93 (Stagg RM, Shuttleworth TJ)
–, Na/NH_4 exchange in trout perfused – 124:181 (Payan P)
–, nociceptors in dogfish – 130:1 (Poole CA, Satchell GH)
–, physical, role of resonance properties in water-bug hearing 148:323 (Prager J, Streng R)
– blood flow in teleosts 133:233 (Farrell AP, et al)
– cleaning in *Limulus* 141:67, 77 (Watson II WH), 87 (Wyse GA, et al)
– control, neural, in nudibranchs 139:11, 17 (Dickinson PS)
– energetics in trout after abrupt changes in external salinity 144:175 (Leray C, et al)
– movements, homologous neurons controlling – in nudibranch molluscs 131:277 (Dickinson PS)
– potentials, effect of adrenaline 124:129 (Shuttleworth TJ)
– –, effects of calcium and pH on trout – 126:277 (McWilliams PG, Potts WTW)
– –, effect of lanthanum on goldfish – 129:145 (Eddy FB, Bath RN)
– rhythms and heart rate in *Limulus* 124:267 (Watson WH III, Wyse GA)
Gillichthys, branchial transport enzymes 145:51 (Doneen BA)
–, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Gills, effects of copper on ionic regulation by flounder – 149:83 (Stagg RM, Shuttleworth TJ)
–, inhibitor effects on ion fluxes in crab – 133:219 (Cameron JN)
–, sodium influx in freshwater mussel – 143:185 (Dietz TH, Graves SY)
–, water exchanges in eel – 124:137 (Isaia J, Isaia A)
Glaucomys, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Gliding flight of *Petaurus* 133:89, 339 (Nachtigall W)
– of flying locusts 131:89 (Baker PS, Cooter RJ)
Glis, infradian cycles 137:315 (Mrosovsky N, et al)
Glossopharyngeal responses of toads to bombardier beetles 135:51 (Dean J)
– taste system, responses of mud puppy – 143:143, 151 (Samanen DW, Bernard RA)
Glow rhythm of *Gonyaulax* 130:355 (Taylor W, et al), 359 (Taylor W, Hastings JW); 138:1 (Dunlap JC, et al), 9 (Rensin L, et al), 19 (Krasnow R, et al); 148:11 (Taylor W, et al)
Glucagon, effect on teleost chloride secretion 146:27 (Foskett JK, et al)
Gluconeogenesis in facultative anaerobic invertebrates 149:477 (Mustafa T, et al)
– in isolated eel liver cells 132:343 (Hayashi S, Ooshiro Z); 135:115, 127 (Renaud JM, Moon TW)
Gluconeogenic enzymes, effect of starvation on – activity in plaice 136:31 (Moon TW, Johnston IA)
Glucosephosphate isomerase of a teleost 138:49 (Palumbi SR, et al)
Glucose phosphorylation and accumulation in an acanthocephalan 126:223 (Starling JA, Fisher FM Jr)
Glucosides, responses of turnip beetle larval galeal sensilla to – 144:495 (Mitchell BK, Gregory P)
Glucosinolate-sensitive cells in beetle 146:393 (Sutcliffe JF, Mitchell BK)
Glutamate, sensitivity of lobster muscles to – 138:187 (Lingle C)
–, transmitter at insect neuromuscular junctions 135:299 (Irving SN, Miller TA); 144:139 (Robinson R)
– dehydrogenase in gastropod hepatopancreas 129:129 (Sollock RL, et al)
Glutathione receptor of *Hydra* 137:73 (Hirakawa Y, Kijima H)
–, reduced, role in *Hydra* feeding response 144:503 (Hanai K)
Glyceraldehyde-3-phosphate dehydrogenase activity, strain difference in mouse – rhythm 148:137 (Peleg L, et al)
Glycerol, temperature control of – levels in overwintering gall fly larva 149:495 (Storey JM, Storey KB)
– turnover in temperature acclimated trout membranes 149:11 (Hazel JR, Neas NP)
Glycogen, effect of hypoxia and anoxia on – in goldfish 136:45 (Thillart G van den, et al)
– metabolism in lizards 147:79 (Gleeson TT)
– phosphorylase, control of activity in sea mussel muscle 148:27 (Ebberink RHM, Salimans M)
– – in silkmoth pupae 131:321 (Ziegler R, et al)
– turnover, effect of light on – in honeybee drone retina 150:69 (Evêquoz V, et al)
Glycolysis, control of – in a sea mussel muscle 137:165 (Ebberink RHM, Zwaan A de)
Glycolytic enzymes, effect of starvation on – activity in plaice 136:31 (Moon TW, Johnston IA)
– potential of *Helix* 126:249 (Wieser W, Wright E)
Glyptonotus, neural temperature compensation 142:411 (Macdonald JA)
Gnathonemus, N. mesencephali exterolateralis and electrocommunication 144:327 (Moller P, Szabo T)
Goldfinch, see *Carduelis*
Goldfish, see also *Carassius*
–, counteraction of central tonus asymmetries 150:473 (Graf W, Meyer DL)
–, fast-start responses following Mauthner cell lesions 145:485 (Eaton RC, et al)
–, lateral line lobe 127:61 (Caird DM)
–, Mauthner cell function 144:521 (Eaton RC, et al)
Gonadal growth, initiation in buntings 144:201 (Tewary PD, Kumar V)
– steroid hormones, effects on hamster hibernation 135:107 (Hall V, Goldman B)
Gonepteryx, red eye glow 132:1 (Ribi WA)
Gonyaulax, anisomycin effects on circadian oscillator 148:11 (Taylor W, et al)
–, circadian rhythm of luciferin binding protein 128:251 (Sulzman FM, et al)
–, effect of aldehydes on glow rhythm 130:359 (Taylor W, Hastings JW)
–, effect of ethanol on glow rhythm 130:355 (Taylor W, et al)
–, effects of protein synthesis inhibitors on circadian clock 138:1 (Dunlap JC, et al), 9 (Rensing L, et al)
–, glow and flashing 138:19 (Krasnow R, et al)

Grapsus, rhabdom membrane turnover 131:205 (Nässel DR, Waterman TH)
Grasshopper, see *Chorthippus, Decticus, Orchelimum, Omocestus*
Gravity, effect on control of compensatory eye responses in lobster 150:23 (Schöne H, et al)
–, interaction with milliped idiothetic course control 133:267 (Mittelstaedt M-L, et al)
– orientation, *Apis* 122:145 (Martin H, Lindauer M)
– – of bee larvae, effect of juvenile hormone 137:7 (Ebert R)
– –, effect of oxygen on snail – 142:51 (Janse C)
– –, effect of substrate contact in lobsters 126:293 (Schöne H, et al)
– – information in cockroach 142:359 (Walthall WW, Hartman HB)
– –, sensory systems involved in snail – 145:311 (Janse C)
– reception, canal-receptor properties in a crab 130:101 (Janse C, Sandeman DC)
– –, influence of cercal and antennal afferences in cricket – 150:93 (Horn E, Bischof H-J)
– –, polarization of crayfish statocyst receptors 130:201 (Takahata M, Hisada M)
Gromphadorhina, sound production 132:27 (Nelson MC)
Ground squirrel, see *Ammospermophilus, Citellus, Spermophilus*
Growth, effect of crop milk feeding on pigeon – 135:97 (Vandeputte-Poma J)
Gryllus, analysis of stridulation 136:247 (Koch UT)
–, antennal tracking of moving targets 142:419 (Honegger H-W)
–, auditory behavior 141:215 (Weber T, et al); 146:361 (Thorson J, et al)
–, auditory interneurons 127:11 (Wohlers DW, Huber F)
–, auditory neurons in the brain 140:81 (Boyan GS)
–, auditory system analysis 141:283 (Kleindienst H-U, et al)
–, biophysics of the ear 123:217 (Larsen ON, Michelsen A)
–, cercus-to-giant interneuron system response to song 141:311 (Kämper G, Dambach M)
–, circadian rhythm reversal 147:299 (Tomioka K, Chiba Y)
–, combined mechanoreceptors and kicking response 122:9 (Dumpert K, Gnatzy W)
–, constancy mechanism in cercal system 137:287 (Rozhkova GI)
–, development of cercal nerve 149:277 (Dagan D, et al)
–, eye cleaning behavior 129:247 (Honegger H-W, et al)
–, gravity reception 150:93 (Horn E, Bischof H-J)
–, high-frequency auditory interneurone in prothoracic ganglion 146:351 (Popov AV, Markovich AM)
–, influence of vibration on hearing 143:135 (Wiese K)
–, localization of K and Ca in the ommatidium 127:245 (Burovina IV, et al)
–, mechanical time resolution in the ear 143:297 (Larsen ON)
–, medulla units 125:259; 136:191 (Honegger HW)
–, motor rhythms in discharge of descending interneurons 148:209 (Otto D, Weber T)
–, neuronal processing of sound 146:161 (Wohlers DW, Huber F)
–, phonotaxis 148:431 (Schmitz B, et al)
–, primary auditory neurons 137:27 (Esch H, et al)
–, prothoracic auditory neurons 126:183 (Popov AV, et al)
–, two-tone suppression of an auditory neuron 144:117 (Boyan GS)
Guinea fowl, see *Numida*
– pig, postural mechanisms 131:235 (Meyer DL, et al)
– –, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Gustatory responses to methyl glycosides in insects and mammals 141:297 (Jakinovich W, et al)
– sensitivity of *Yponomeuta* larvae 134:265 (Drongelen W van)
Gymnocorymbus, effect of alarm substance on central nervous excitation 123:281 (Pfeiffer W, Riegelbauer G)
Gymnorhamphichthys, jamming avoidance response 124:211 (Heiligenberg W, et al)
Gymnotoidei, see *Gymnorhamphichthys, Gymnotus, Hypopomus, Hypopygus, Parupygus*
Gymnotus, EOD sound response 143:435 (Kramer B, et al)
–, frequency response of electroreceptors 134:191 (Watson D, Bastian J)
–, Jamming Avoidance Response 136:165 (Baker CL Jr)
–, pacemaker control of EOD 141:197 (Baker CL Jr)

H

Habituation, effect of ACTH in the toad 131:129 (Horn E, et al)
Haementeria, nervous system 144:435 (Kramer AP, Goldman JR), 449 (Kramer AP)
Hair receptors, acoustical responses in insects 127:185 (Fletcher NH)
– –, statolith- and free-hook – in crab statocyst 137:51 (Janse C)
Hairs, air movement sensitive, in locust 145:369 (Pflüger H-J, Tautz J)
Halichoerus, respiratory properties of blood 149:49 (Lapennas GN, Reeves RB)
Halosauropsis, pressure adaptation of lactate dehydrogenase 129:295 (Siebenaller JF, Somero GN)
Halteres, effects on fly head movements 136:361 (Sandeman DC)
Hamster, see *Mesocricetus, Phodopus*
Hatching, neural control of chick – 145:497 (Bekoff A, Kauer JA)
Head, isolated, perfused, of toad-fish 149:107 (Oduleye SO, et al), 115 (Oduleye SO, Evans DH)
– grooming behaviour in mantis after foreleg amputation 125:253 (Zack S)
– movements, effects of halteres on fly – 136:361 (Sandeman DC)
– reflexes, role of prosternal organ in walking fly 126:137 (Horn E, Lang H-G)
Hearing, see also acoustic, auditory
–, accuracy of female cricket acoustic orientation 141:93 (Oldfield BP)
–, accuracy of phonotaxis by treefrogs 133:247 (Rheinlaender J, et al)
–, acoustic behavior of bats in the field 142:67 (Miller LA, Degn HJ)
–, acoustic evoked activity in shark brains 129:223 (Bullock TH, Corwin JT)
–, acoustical responses of insect hair receptors 127:185 (Fletcher NH)
–, amplitude modulation thresholds for the parakeet 143:383 (Dooling RJ, Searcy MH)
–, analysis of cricket auditory system using a closed sound field 141:283 (Kleindienst H-U, et al)
–, auditory behavior of crickets 141:215 (Weber T, et al); 146:361 (Thorson J, et al); 148:431 (Schmitz B, et al)
–, auditory evoked potentials in the manatee 148:547 (Bullock TH, et al)
–, auditory fibre activity in the gecko 142:203 (Eatock RA et al.), 219 (Eatock RA, Manley GA)
–, auditory function in Tettigoniidae 142:169 (Hill KG, Oldfield BP)
–, autidory giant neuron in a bush cricket 132:225 (Kalmring K, et al)
–, auditory interneurons in crickets 121:1 (Casaday GB, Hoy RR); 127:11 (Wohlers DW, Huber F)
–, auditory midbrain properties in big brown bat 147:351 (Jen PH-S, Schlegel PA)
–, auditory neurons in cricket brain 140:81 (Boyan GS)
–, auditory neurons in echolocating bat superior olivary complex 128:47 (Jen PH-S)
–, auditory neurophysiology of bat inferior colliculus 131:137 (Vater M, et al), 147 (Vater M, Schlegel P)
–, auditory pathway in locust ventral cord 126:25 (Kalmring K, et al)
–, auditory physiology of the New Zealand weta 141:31 (Field LH, et al), 39 (Hill KG)
–, auditory processing in locust metathoracic ganglion 144:305 (Römer H, et al)
–, auditory sensitivity of a moth 129:79 (Fullard JH)
–, auditory structure and function of mouse middle ear 146:517 (Saunders JC, Summers RM)
–, auditory temporal discrimination by goldfish 147:201 (Fay RR)

Hearing, avoidance behavior of *Chrysopa* to ultrasound 131:113 (Miller LA, Olesen J)
–, bat sound detection by moths 143:363 (Fullard JH, Thomas DW)
–, behavioral audiogram and masked thresholds of *Rousettus* 136:227 (Suthers RA, Summers CA)
–, behavioral auditory masking in treefrogs 141:13 (Ehret G, Gerhardt HC)
–, behavioral information in grasshopper song 124:27 (Skovmand O, Pedersen SB)
–, behavioral responses of frog eating bat to sonic frequencies 150:413 (Ryan MJ, et al)
–, bilateral coding of sound direction in bushcricket CNS 140:101 (Rheinlaender J, Römer H)
–, biophysics of the ensiferan ear 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al), 217 (Larsen ON, Michelsen A)
–, brainstem auditory evoked responses to tone bursts in an echolocating bat 146:283 (Belknap DB, Suthers RA)
–, calling song recognition in the field cricket 146:361 (Thorson J, et al)
– in *Cicadetta* 142:271 (Popov AV)
–, cochlear structures in the mouse 122:65 (Ehret G, Frankenreiter M)
–, coding of auditory signals in anuran torus semicircularis 138:131 (Walkowiak W)
–, coding in grasshopper auditory/vibrational neurons 139:267 (Kalmring K, Kühne K)
–, coding of sinusoidal modulations in bat chochlear nucleus 149:369 (Vater M)
–, coding of sound signals in locust ventral cord 128:213 (Kalmring K, et al)
–, critical bands in *Melopsittacus* 125:359 (Saunders JC, et al)
–, development in a pallid bat 126:169 (Brown PE, et al)
–, differences in two species of squirrelfish 132:203 (Coombs S, Popper AN)
–, directional responses to sound in cricket central nervous system 130:137, 151 (Boyan GS)
–, directionality of acoustic orientation in flying crickets 146:207 (Pollack GS, Plourde N)
–, directionality of frog torus semicircularis neurons 144:419 (Feng AS)
–, Doppler shift compensation in South Indian bats 139:349 (Schuller G)
–, echolocation and obstacle avoidance in a bat 131:161 (Gustafson Y, Schnitzler HU)
–, echolocation by *Plecotus* 122:201 (Simmons JA, O'Farrell MJ)
–, echolocation by *Tadarida* 125:291 (Simmons JA, et al)
–, effect of moth – on bat echolocation 132:77 (Fenton MB, Fullard JH)
–, effect of pituitary hormones on acoustic responses of frog anterior preoptic units 141:163 (Urano A, Gorbman A)
–, effect of vocalization on auditory processing in a bat 132:39 (Schuller G)
–, electrical and acoustical activation of songbird middle ear muscle 150:61 (Oeckinghaus H, Schwartzkopff J)
–, element composition of inner ear lymphs 126:1 (Peterson SK, et al)
–, EOD sound response in weakly electric fish 143:435 (Kramer B, et al)
–, forward masking and suppression in treefrog midbrain 146:435 (Hillery CM, Fay RR)
–, frequency and direction sensitivity of cricket auditory system 121:79 (Hill KG, Boyan GS)
–, frequency representation in frog medulla 143:339 (Fuzessery ZM, Feng AS)
–, frequency resolution of cricket ear 148:237 (Ehret G, et al)
–, frequency selectivity of anuran medulla 150:107 (Fuzessery ZM, Feng AS)
–, frequency selectivity in frog auditory midbrain 146:471 (Fuzessery ZM, Feng AS)
–, functional organisation of Guinea fowl auditory neostriatum 132:243 (Bonke D, et al), 257 (Scheich H, et al)
–, high-frequency auditory interneuron in cricket prothoracic ganglion 146:351 (Popov AV, Markovich AM)
–, inferior colliculus neurons in the mouse 127:175 (Willott JF, Urban GP)
–, influence of vibration on cricket – 143:135 (Wiese K)
–, infrasound detection by homing pigeons 129:1 (Kreithen ML, Quine DB); 141:153 (Quine DB, Kreithen ML)
–, masking patterns for treefrog auditory nerve fibers 141:1 (Ehret G, Capranica RR)
–, mating call recognition in treefrogs 144:9, 17 (Gerhardt HC)
–, mating call selectivity in frog thalamus and midbrain 150:333 (Fuzessery ZM, Feng AS)
–, mechanical time resolution in some insect ears 143:289 (Schiolten P, et al), 297 (Larsen ON)
–, middle ear and laryngeal muscle reflexes in the bat 124:61 (Jen PH-S, et al)
–, middle ear sensitivity in anurans and reptiles 127:97 (Moffat AJM, Capranica RR)
–, multiple specializations in bat auditory periphery 131:255 (Pollak G, et al)
–, neuronal processing of sound in cricket prothoracic ganglion 146:161 (Wohlers DW, Huber F)
–, peripheral auditory physiology in lemon shark 142:379 (Corwin JT)
–, phonotaxis to rhythmic components in cricket calling song 144:367 (Pollack GS, Hoy R)
–, primary auditory neurons in crickets 137:27 (Esch H, et al)
–, prothoracic auditory neurons in the cricket 126:183 (Popov AV, et al)
–, recognition of FM calls by a neotropical frog 150:217 (Ryan MJ)
–, response of cricket cercus-to-giant interneuron system to species-specific song 141:311 (Kämper G, Dambach M)
–, response properties of cricket primary auditory fibers 143:129 (Hutchings M, Lewis B)
–, responses of grasshopper tibial receptor neurons 127:109 (Kalmring K, et al)
–, responses of inferior collicular neurons of paleotropical bats to acoustic stimuli 146:423 (Jen PHS, Suthers RA)
–, responses of single cells in blackbird auditory nuclei 126:347 (Sachs MB, Sinnott JM)
–, role of owl interaural pathway in sound localization 144:299 (Moiseff A, Konishi M)
–, role of water-bug airbubble resonance in sound reception 148:323 (Prager J, Streng R)
–, sexual differences in cricket calling song recognition 146:217 (Pollack GS)
–, single unit responses in bat inferior colliculus to linear frequency modulations 141:249 (Vater M)
–, sound localization by the barn owl 133:1 (Knudsen EI, et al), 13 (Knudsen EI, Konishi M)
–, spider trichobothria 123:59 (Reißland A, Görner P), 71 (Reißland A)
–, structure and function of catfish ear 144:27 (Popper AN, Tavolga WN)
–, response characteristics of inferior colliculus neurons of awake *Rhinolophus* 125:217 (Möller J, et al), 227 (Möller J)
–, response properties of auditory neurones in bird midbrain 134:241 (Coles RB, Aitkin LM)
–, signal detection among closely related damselfish species 140:135 (Myrberg AA JR, Spires JY)
–, sound transmission through avian interaural pathways 136:183 (Rosowski JJ, Saunders JC)
–, target detection by echolocating bat 145:431 (Kick SA)
–, temperature effects on anuran auditory thresholds 130:9 (Mohneke R, Schneider H), 17 (Hubl L, Schneider H)
–, tonotopic organization of bullfrog amphibian papilla 145:437 (Lewis ER, et al)
–, tonotopic organisation of tettigoniid auditory receptors 147:461 (Oldfield BP)
–, two-tone suppression of an auditory neuron in cricket brain 144:117 (Boyan GS)
–, ultrasound recognition in house mice 148:245 (Ehret G, Haack B)
–, vibration of perch saccular otolith 123:85 (Sand O, Michelsen A)
–, vibratory interneurons in bug central nervous system 139:87 (Čokl A, Amon T)
–, directional, in *Gadus* 122:1 (Hawkins AD, Sand O)
–, three-dimensional, of the cod 150:175 (Buwalda RJA, et al)

Heart, see also cardiac, cardio-
–, acidosis and Ca distribution in flounder and rat myocardium 143:245 (Gesser H, Poupa O)
–, adrenergic innervation of teleost – 147:85 (Donald J, Campbell G)
–, atrial adrenoceptors in trout – 139:109; 143:161 (Ask JA, et al)
–, cholinergic responses of clam – 129:61 (Elliot FJ)
–, difference in blood oxygen levels in outflow vessels of a teleostean – 149:435 (Ishimatsu A, Itazawa Y)
–, effect of temperature on responses to adrenaline in the frog – 132:313 (Stene-Larsen G, Helle KB)
–, energy metabolism in whelk ventricle 142:457 (Ellington WR)
–, ganglionic activation of lobster myocardium 139:67 (Kuramoto T, Kuwasawa K)
–, myoglobin content and activities of enzymes of energy metabolism in fish – 149:67 (Driedzic WR, Stewart JM)
–, developing, membrane lipids of chick – 125:151 (Kutchai H, et al)
– power, time sharing of – in *Aplysia* 149:31 (Koch UT, Koester J)
– rate, adaptive changes in *Aplysia* 123:11 (Dieringer N, et al)
– –, control by autonomic nervous system in the mole rat 142:533 (Storier D, et al)
– – of crab emerged into air 132:305 (Wheatly MG, Taylor EW)
– – of crayfish submerged in normoxic water and exposed in air 138:67 (Taylor EW, Wheatly MG)
– –, effect of breathing on toad – 143:223 (Segura ET, et al)
– – and gill rhythm in *Limulus* 124:267 (Watson WH III, Wyse GA)
– – during locomotion in mammals 127:337 (Baudinette RV)
– – in the springhare 133:187 (Müller EF, et al)
– –, thermoregulation by conditioned changes in – in pigeon 144:375 (Sieland M, et al)
– ventricle, hyperosmotic cell volume regulation in flounder – 140:185 (Vislie T)
Heartbeat coordination in *Hirudo* 122:111 (Calabrese RL)
Heat balance in the koala 134:293 (Degabriele R, Dawson TJ)
– gain, radiative, of pigeon plumage 126:211 (Walsberg GE, et al)
– loss, respiratory, in a parrot 142:479 (Bucher TL)
– nociceptors in pigeon skin 135:201 (Necker R, Reiner B)
– production, see also thermoregulation
– – and dissipation in mice 142:445 (Haim A, Borut A)
– – in a snail infected with *Schistosoma* 135:101 (Becker W)
– reinforcement in cold exposed pigeons 133:151 (Schmidt I, Simon E)
Hedgehog, see *Erinaceus*
HeLa cells, amino acid uptake and incorporation 140:267 (Wheatley DN, Walker E)
Helix, effects of 5-hydroxytryptamine and endogenous peptides on neuromuscular activity 139:333, 341 (Lloyd PE)
–, endogenous cardioactive peptides 138:265 (Lloyd PE)
–, enzymes in hepatopancreas 129:129 (Sollock RL, et al), 137 (Campbell JW, Vorhaben JE)
–, glycolytic potential 126:249 (Wieser W, Wright E)
–, immunobiological recognition system 141:477 (Renwrantz L, et al)
–, neurohormonal control of cardiac activity 128:269, 277 (Lloyd PE)
–, photoperiodic control of circannual rhythms 142:89 (Bailey SER)
–, responses to anoxia 141:503 (Wieser W)
Hellgrammite, see *Corydalus*
Hemianax, connexions between ocellar receptors and second-order neurons 149:389 (Simmons PJ)
–, discrete potentials in ocellus 128:347 (Wilson M)
Hemicordulia, connexions between ocellar receptors and second-order neurons 149:389 (Simmons PJ)
–, light adaptation in peripheral visual system 128:319 (Laughlin SB, Hardie RC)
–, ocellar component of flight equilibrium control 141:335 (Stange G)
Hemidactylus, postural mechanisms 131:235 (Meyer DL, et al)
Hemideina, auditory physiology 141:31 (Field LH, et al), 39 (Hill KG)
Hemigrapsus, hyperosmotic readjustment 128:147 (Bedford JJ, Leader JP)
–, sinus gland hormones 122:359 (Keller R)
–, volume regulation of muscle fibers 128:153 (Leader JP, Bedford JJ)
Hemitripterus, myoglobin content and activities of enzymes of heart energy metabolism 149:67 (Driedzic WR, Stewart JM)
Hemocyanin, environmental effects on structure and function of shrimp – 143:253, 261 (Miller KI, Van Holde KE)
–, gas transport qualities of shrimp – 145:21 (Weber RE, Hagerman L)
–, oxygen-binding of *Buccinum* – 129:97 (Brix O, et al)
–, oxygen binding of spider – 128:161 (Loewe R)
–, oxygen transport in crayfish blood 123:105 (Angersbach D, Decker H)
–, oxygen transport in spider blood 123:113 (Angersbach D)
–, quaternary structure of *Cupiennius* – 140:199 (Markl J)
–, subunit heterogeneity in Chelicerata 130:283 (Markl J, et al)
–, subunit heterogeneity in crustaceans 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
Hemoglobin, see also blood
– function in a backswimmer 142:515 (Wells RMC, et al)
–, hypoxic adaptation of – function in the carp 128:127 (Weber RE, Lykkeboe G)
–, phosphate binding by llama and camel – 136:67 (Bauer C, et al)
– –, oxygen affinity in mouse embryonic erythrocytes 129:333 (Wells RMG)
Hemoglobins, maternal and fetal, oxygen affinities in a viviparous seaperch 142:523 (Ingermann RL, Terwilliger PC)
Hemolymph, acid-base balance of crayfish – 149:463 (Dejours P, Armand J)
–, biochemical changes induced by stress in *Mytilus* 127:287 (Thompson RJ, et al)
–, diglyceride-binding protein in locust – 136:1 (Gellissen G, Emmerich H)
–, effect of temperature on gas content and acid-base status in spider – 134:331 (Loewe R, Brauer de Eggert H)
–, effects of anoxia on solute activity in snail – 141:503 (Wieser W)
–, gas transport qualities of shrimp hemocyanin 145:21 (Weber RE, Hagerman L)
–, immunobiological recognition system in snail – 141:477 (Renwrantz L, et al)
–, latex particles in crayfish – 132:363 (Merrill DP, et al)
–, opsonizing properties of an isolated agglutinin from mussel – 149:535 (Renwrantz L, Stahmer A)
–, transferrin in crab – 148:101 (Huebers HA, et al)
– acid base changes, effect of ventilation in a crab 141:489 (Burnett LE, Johansen K)
– circulation in a butterfly 139:145 (Wasserthal LT)
– circulation, oscillating, in silk moth 145:1 (Wasserthal LT)
– clotting in a cockroach 143:169 (Bohn H, et al)
– transport in silk moth wings 147:27 (Wasserthal LT)
Hen, see chicken, fowl, *Gallus*
Hepatocytes, see also liver cells
–, gluconeogenesis in eel – 135:115, 127 (Renaud JM, Moon TW)
–, incorporation of 1-^{14}C-acetate into fatty acids by trout – 134:321 (Hazel JR, Prosser CL)
Hepatopancreas, enzymes in gastropod – 129:129 (Sollock RL, et al), 137 (Campbell JW, Vorhaben JE)
Hermit crab, see *Pagurus*
Hesperonoe, Ca-dependent bioluminescence 129:67 (Herrera AA)
Heteroptera, see *Anisops, Corixa, Gerris, Nezara, Notonecta, Oncopeltus, Rhodnius*
Hexanol, acute tolerance of goldfish to – 142:61 (Hill MW, et al)
Hexogrammos, electric field 141:277 (Butsuk SV, Bessonov BI)
Hibernation, control of annual rhythms in chipmunks 141:369 (Kenagy GJ)
–, effects of gonadal steroid hormones in hamster – 135:107 (Hall V, Goldman B)
–, effects of pinealectomy on ground squirrel – 146:501 (Phillips JA, Harlow HJ)

Hibernation, hamster skeletal muscle 122:385 (Vyskocil, Gutman E)
–, interrelation with reproduction rhythm in a ground squirrel 135:333 (Kenagy GJ)
–, intraspecific differences in ground suirrel patterns of – 148:83 (French AR)
–, role of carbohydrate on torpor duration in ground squirrel 147:129 (Zimmerman ML)
–, temperature effects on red cell sodium pump during – 138:43 (Willis JS, et al)
–, thermogenic capacity of *Spermophilus* 140:235 (Abbotts B, Lawrence CHW)
Hippoglossus, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Hipposiderus, hearing and Doppler shift compensation 139:349 (Schuller G)
–, inferior collicular neuron responses 146:423 (Jen PHS, Suthers RA)
Hirudo, blood volume control 127:343 (Zerbst-Boroffka I)
–, calcium depletion depolarizations of Retzius cell membrane 150:499 (Yang J, Lent DM)
–, heartbeat coordination 112:111 (Calabrese RL)
–, muscle excitation, inhibition and modulation 146:527 (Mason A, Kristan WB Jr)
–, neural control of cord shortening 124:339 (Magni F, Pellegrino M)
–, neuromuscular transmission 124:333 (Kuffler DP)
–, responses to water waves 144:111 (Young SR, et al)
–, synaptic basis of swim initiation 148:253, 265 (Weeks JC)
–, urine formation during diuresis 146:75 (Zerbst-Boroffka I, et al)
–, water and salt excretion 139:97 (Wenning A, et al)
Holocentrus, torus longitudinalis 150:39 (Northmore DPM, et al)
Holothurian, metabolic adaptations 122:347 (Ellington WR, Hammen CS)
Holothurians, muscle contractions 136:103 (Prosser CL, Mackie GO)
Holthuisana, sodium regulation 142:451 (Greenaway P)
Homarus, chemoreceptor cells in walking legs 146:181 (Derby CD, Atema J)
–, coagulation 142:473 (Ghidalia W, et al)
–, command fiber activation of abdominal flexor motoneurons 148:515 (Thompson CS, Page CH)
–, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, neurosecretory polypeptides in eyestalk 134:303 (Andrew RD, Saleuddin ASM)
–, oscillatory input to motor pattern generators 143:453 (Robertson RM, Moulins M)
–, pharmacological dissection of neural pattern generator 139:1 (Young RE, et al)
–, sinus gland hormones 122:359 (Keller R)
–, walking leg reflexes 123:289 (Ayers JL Jr, Davis WJ)
Homeostasis of hamster circadian periodicity 123:265 (Fitzgerald K, et al)
Homing orientation of pigeons 128:285 (Ioalé R, et al), 297 (Waldvogel JA, et al), 303 (Papi F, et al); 129:1 (Kreithen ML, Quine DB); 135:227 (Papi F, et al); 139:193, 209 (Wallraff HG), 203 (Wallraff HG, et al)
Homoptera, see *Cicadetta, Trialeurodes*
Homorocoryphus, biophysics of the ear 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al)
Honey bee, see *Apis*
Honeyeater, see *Lichmera*
Horizontal cells in fly optic lobe 143:511 (Eckert H)
Hormone, see also neurohormone
–, juvenile, effect on gravity orientation of bee larvae 137:7 (Ebert R)
–, –, esterases in Lepidoptera 148:1 (Jones D, et al)
–, –, hydrolysis in diapausing and non-diapausing corn borer larvae 144:205 (Mane SD, Chippendale GM)
–, –, regulation of ommochrome synthesis in tobacco hornworm by – 147:1 (Hori M, Riddiford LM)
–, parathyroid, cardiovascular effects in frogs 147:101 (Strickland ML, et al)
–, –, effect on renal clearance in turtle 141:463 (Laverty G, Clark NB)
–, reproductive maturation, in a slug 143:311 (McCrone EJ, et al)
Hormones, antidiuretic effects of fish urophysis in rats 135:183 (Ichikawa T)
–, atrial gland substance and egg-laying in *Aplysia* 128:67; 141:131 (Arch S, et al)
–, control of xanthommatin content in *Pieris* larvae 136:21 (Beydon P, et al)
–, cytoplasmic receptors for ecdysteroids in crayfish 128:95 (Kuppert P, et al)
–, ecdysteroid secretion by crayfish Y-organs 130:347 (Keller R, Schmid E)
–, effect of ACTH on habituation in toads 131:129 (Horn E, et al)
–, effects of corpora cardiaca-corpora allata system on cockroach rectum 138:347 (Tolman JH, Steele JE), 357 (Steele JF, Tolman JH)
–, effects of epinephrine, glucagon and vasoactive intestinal polypeptide on chloride secretion in a tilapia 146:27 (Foskett JK, et al)
–, effect of melatonin and thyroid block on torpor in a mouse 125:157 (Lynch GR, et al)
–, effects of gonadal steroid – on hamster hibernation 135:107 (Hall V, Goldman B)
–, effects of pituitary – on plasma thyorid – in the trout 124:105 (Milne RS, Leatherland JF)
–, influence of acoustic signals on production of – in frog testes 140:25 (Brzoska J, Obert H-J)
–, iodine metabolism in a snake 131:297 (Wong CC, Chiu KW)
–, JH metabolism in *Drosophila* 132:319 (Klages G, Emmerich H)
–, melatonin affects lizard circadian rhythmicity 130:317 (Underwood H)
–, plasma cortisol in steelhead trout 146:123 (Schmidt SP, House EW)
–, role of prolactin and cortisol in tilapia intestinal absorption 146:1 (Mainoya JR)
–, role in slug sexual maturation 133:117 (McCrone EJ, Sokolove PG)
–, prolactin regulation in salmon 140:217 (Brewer KJ, McKeown BA)
–, crustacean sinus gland – 122:359 (Keller R)
–, eyestalk-, effect on gastric mill in the lobster 141:363 (Fleischer AG)
–, pituitary, effect on acoustic responses of frog anterior preoptic units 141:163 (Urano A, Gorbman A)
–, thyroid – induce changes in rat muscle energy metabolism 142:465 (Nicol CJM, Johnston IA)
Housing, effect on mouse water balance 133:241 (Esher RJ, Wolfe JL)
Hoverfly, see *Eristalis, Syritta, Volucella*
Human, see man
Hummingbird, see *Archilochus*
Hyalophora, glycogen phosphorylase in pupal fat body 131:321 (Ziegler R, et al)
Hyas, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
Hydra, glutathione receptor 137:73 (Hirakawa Y, Kijima H)
–, feeding response components elicited by trypsin 150:521 (Kitajima M, Hanai K)
–, pacemakers and conducting tissues 128:71 (Kass-Simon G, Passano LM)
–, quantitative analysis of feeding response 144:503 (Hanai K)
–, reaction chain in feeding behavior 150:99 (Koizumi O, et al)
–, rise of feeding threshold 142:75 (Koizumi O, Maeda N)
Hydrogen ions, effects on trout gill potentials 126:277 (McWilliams PC, Potts WTW)
Hydromantes, prey catching behavior 123:261 (Roth G)
Hydromedusa, see *Polyorchis*
Hydropsyche, recording of larval sounds 140:159 (Silver SC, Halls JAT)
5-Hydroxytryptamine, effect on snail neuromuscular activity 139:333, 341 (Lloyd PE)
Hydrozoa, see *Sarsia*
Hydrozoan medusae, neuronal control of locomotion 150:195 (Satterlie RA, Spencer AN)
Hygroreceptive sensillum of the stick insect 132:149 (Tichy H)
Hygroreceptor mechanism in cockroach antenna 124:53 (Yokohari F)
Hyla, accuracy of phonotaxis 133:247 (Rheinlaender J, et al)
–, activity metabolism 129:309 (Hillman SS, et al)
–, behavioral auditory masking 141:13 (Ehret G, Gerhardt HC)

Hyla, behavioral refractory period 148:337 (Narins PM)
–, forward masking and suppression in the midbrain 146:435 (Hillery CM, Fay RR)
–, masking patterns for auditory nerve fibers 141:1 (Ehret G, Capranica RR)
–, mating call recognition 144:9, 17 (Gerhardt HC)
–, middle ear sensitivity 127:97 (Moffat AJM, Capranica RR)
–, temperature effects on auditory thresholds 130:17 (Hubl L, Schneider R)
–, temperature effects on sound communication 137:1 (Gerhardt HC, Mudry KM)
Hymenoptera, see *Apis, Atta, Bombus, Camponotus, Cataglyphis, Formica, Myrmecia, Nasonia*
Hypercapnia, effect on crab blood acid-base status 123:137 (Cameron JN)
–, ventilatory responses of *Natrix* to – 129:105 (Gratz RK)
Hypercarbia, ventilatory responses of burrowing owl and bobwhite to – 149:527 (Boggs DF, Kilgore DL Jr)
Hyperia, transparent eye 147:339 (Nilsson D-E)
Hyperosmotic readjustment of a crab 128:147 (Bedford JJ, Leader JP)
Hyperoxia, ventilatory reflex response of crayfish to – 140:193 (Massabuau J-C, et al)
Hypoglossal dominance, reversal in canaries after unilateral syringeal denervation 134:227 (Nottebohm F, et al)
Hypophysectomy, effect on salamander salt balance 132:357 (Brown PS, et al)
–, effect on snake iodine metabolism 131:297 (Wong CC, Chiu KW)
Hypopomus, EOD sound response 143:435 (Kramer B, et al)
–, evaluation of electroreceptive feedback 138:173 (Heiligenberg W)
–, jamming avoidance response 124:211 (Heiligenberg W, et al); 136:165 (Baker CL Jr)
–, pacemaker control of EOD 141:197 (Baker CL Jr)
–, variability in electroreceptors 121:53 (Bastian J)
Hypo-osmotic shock, effects on ion level in crab axon 129:365 (Kévers C, et al)
Hypostomus, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Hypopygus, jamming avoidance response 124:211 (Heiligenberg W, et al)
Hypothalamic activity, influence of thermal stimulation of spinal cord and skin 126:151 (Rosner G)
– pacemakers regulating quail circadian rhythms 144:381 (Simpson SM, Follett BK)
– thermosensitivity in chipmunks 125:175 (Chappell MA, et al)
Hypothermia in a desert shrew 137:173 (Lindstedt SL)
Hypoxia, arterial chemoreceptors and respiration in ducks 133:177 (Bouverot P, et al)
–, effect on blood respiratory properties in octopus 148:35 (Houlihan DF, et al)
–, effect on circulating catecholamines in dogfish 127:325 (Butler PJ, et al)
–, effect on dogfish metabolism 132:297 (Butler PJ, et al)
–, effect on energy metabolism in whelk ventricle 142:457 (Ellington WR)
–, effect on phosporylated compounds and glycogen in goldfish 136:45 (Thillart G van den, et al)
–, effect on trout blood oxygen binding properties 136:83 (Soivio A, et al)
–, responses of *Carcinus* to – 122:391 (Taylor EW, et al)
–, responses of trout blood to – 145:117 (Tetens V, Lykkeboe G)
–, responses in trout secondary lamellae to – 145:37 (Soivio A, Tuurala H)
–, ventilatory responses of burrowing owl and bobwhite to – 149:527 (Boggs DF, Kilgore DL Jr)
–, ventilatory responses of *Natrix* to – 129:105 (Gratz RK)
Hypoxic adaptation of carp hemoglobin function 128:127 (Weber RE, Lykkeboe G)

I

Ichthyomyzon, induction of swimming 136:337 (Poon MLT)
–, synaptic inhibition in motoneurons and interneurons during fictive swimming 147:189 (Kahn JA)
Ictalurus, calcium effect on electroreceptor operation 121:381 (Bauswein E)
–, chemical gradient detection 140:95 (Johnsen PB, Teeter JH)
–, chemical synapse in electroreceptors 126:147 (Roth A)
–, chemo- and mechanoreception 147:217 (Davenport CJ, Caprio J)
–, electroreception in the cerebellum 145:289 (Tong SL, Bullock TH)
–, extraretinal photoreceptors 130:277 (Hartwig HG, Veen T van)
–, low temperature dormancy 148:41 (Crawshaw LI, et al)
–, nucleus praeeminentialis 145:299 (Tong SL)
–, olfaction and taste 123:357 (Caprio J)
–, oro-pharyngeal taste system 150:345 (Kanwal JS, Caprio J)
–, statistics of electroreceptor sensitivity 137:273 (Bretschneider F, et al)
Idiothetic course control in millipedes 133:267 (Mittelstaedt M-L, et al)
Iguana, see also *Amblyrhynchus*
Iguana, thermal effects on spinal motoneurons 139:251 (Görke K)
Illex, optical properties of eye 147:323 (Sivak G)
Illumination changes, effect on crab rhabdom synthesis 142:19 (Stowe S)
Imidazole alphastat hypothesis 123:97 (Hazel JR, et al)
Immunobiological recognition system in a snail 141:477 (Renwrantz L, et al)
Immunobiology, opsonizing properties of an mussel hemolymph agglutinin 149:535 (Renwrantz L, Stahmer A)
Indigo bunting, see *Passerina*
Inferior colliculus, acoustic fovea in horseshoe bats 132:47 (Schuller G, Pollak G)
– –, auditory neurophysiology in two related bat species 131:137 (Vater M, et al), 147 (Vater M, Schlegel P)
– –, auditory properties of neurons in bat – 147:351 (Jen PH-S, Schlegel PA)
– –, effect of vocalization on auditory processing 132:39 (Schuller G)
– –, properties of neurons in the mouse 127:175 (Willott JF, Urban GP)
– –, responses of neurons to acoustic stimuli in FM and CF-FM paleotropical bats 146:423 (Jen PHS, Suthers RA)
– –, single unit responses in bat – 141:249 (Vater M)
– – neurons of *Rhinolophus* 125:217 (Möller J, et al), 227 (Möller J)
Information transmission in fly eye 126:87 (French AS, Järvilehto M)
Infradian cycles in dormice 137:315 (Mrosovsky N, et al)
Infrasound detection by homing pigeons 129:1 (Kreithen ML, Quine DB); 141:153 (Quine DB, Kreithen ML)
Ingestion, motor program in a mollusc 145:277; 147:143 (Croll RP, Davis WJ)
Inhibition of cockroach giant interneurons during walking 138:231, 241 (Daley DL, Delcomyn F)
–, pre- and postsynaptic, in cricket interneurons 135:269 (Levine RB, Murphey RK)
–, reciprocal, between two behaviors in *Pleurobranchaea* 139:77 (Kovac MP, Davis WJ)
Inhibitor effects on crab gill ion fluxes 133:219 (Cameron JN)
Insecta, achromatic vision in *Apis* 141:389 (Menzel R)
–, acoustic orientation of female *Teleogryllus* 141:93 (Oldfield BP)
–, acoustic orientation of flying *Teleogryllus* 146:207 (Pollack GS, Plourde N)
–, acoustical response of hair receptors 127:185 (Fletcher NH)
–, action potentials of *Bombyx* neurons 140:43 (Miyazaki S)
–, aerodynamic and mechanical properties of *Locusta* antennae 139:357 (Gewecke M, Heinzel H-G)
–, air movement sensitive hairs of *Locusta* 145:369 (Pflüger H-J, Tautz J)
–, analysis of cricket auditory system 141:283 (Kleindienst H-U, et al)
–, antennal tracking of moving targets in *Gryllus* 142:419 (Honegger H-W)

Insecta, antennal warm and cold receptors of *Speophyes* 143:443 (Loftus R, Corbière-Tichané G)
–, arboreal singing of *Anurogryllus* 132:217 (Paul RC, Walker TJ)
–, arginine and memory consolidation in *Stagmatoptera* 147:231 (D'Alessio G, et al)
–, astroorientation in *Lethrus* 121:253 (Frantsevich L, et al)
–, ATPases in *Calliphora* eyes and brain 123:245 (Rivera MF, Langer H)
–, auditory behavior of *Gryllus* 141:215 (Weber T, et al); 146:361 (Thorson J, et al)
–, auditory function in Tettigoniidae 142:169 (Hill KG, Oldfield BP)
–, auditory giant fibre in *Decticus* 132:225 (Kalmring K, et al)
–, auditory interneurons of *Gryllus* 127:11 (Wohlers, DW, Huber F)
–, auditory interneurons of *Teleogryllus* 121:1 (Casaday GB, Hoy RR)
–, auditory neurons in *Gryllus* brain 140:81 (Boyan GS)
–, auditory pathway in *Locusta* ventral cord 126:25 (Kalmring K, et al)
–, auditory physiology of *Hemideina* 141:31 (Field LH, et al), 39 (Hill KG)
–, auditory processing in *Locusta* 144:305 (Römer H, et al)
–, auditory sensitivity of *Cycnia* 129:79 (Fullard JH)
–, avoidance behavior in *Chrysopa* 131:113 (Miller LA, Olesen J), 121 (Olesen J, Miller LA)
–, behavioral plasticity in a *Drosophila* mutant 130:271 (Dudai Y)
–, behavioral sequence in *Aeschna* larva 127:89 (Etienne AS)
–, bimodal interneurone in the brain of *Schistocerca* 126:317 (Bacon J, Tyrer M)
–, biogenic amines in *Apis* conditioned responses 145:363 (Mercer AR, Menzel R)
–, biophysics of the ensiferan ear 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al), 217 (Larsen ON, Michelsen A)
–, body vibration and sound production in *Atta* 150:239 (Masters WM, et al)
–, brightness perception of *Drosophila* mutants 133:283 (Reichert H, Bicker G)
–, cercal mechanoreceptors of *Gryllus* 122:9 (Dumpert K, Gnatzy W)
–, cercal nerve responses to wind in *Periplaneta* 133:97 (Westin J); 103 (Dagan D, Camhi JM)
–, cercal receptors and interneurons of *Acheta* 129:51 (Tobias M, Murphey RK)
–, cercus-to-giant interneuron response to *Gryllus* song 141:311 (Kämper G, Dambach M)
–, chemosensitive cells in *Entomoscelis* larval galeal sensilla 144:495 (Mitchell BK, Gregory P)
–, cholinergic activities in *Locusta* CNS 141:271 (Breer H)
–, cholinergic giant fibers in *Periplaneta* 126:157 (Dagan D, Sarne Y)
–, chromatic aberration of *Musca* corneal lens 146:493 (McIntyre P, Kirschfeld K)
–, chromatic adaptation in *Apis* 144:543 (Neumeyer C)
–, circadian clock of *Anthia* 149:311 (Fleissner G)
–, circadian control of *Rhodnius* ecdysis 147:281 (Ampleford EJ, Steel CGH)
–, circadian periodicity in *Leucophaea* 146:255 (Roberts SK)
–, circadian rhythm in *Drosophila* salivary glands 143:229 (Weitzel G, Rensing L)
–, circadian rhythm of *Manduca* visual sensitivity 150:165 (Bennett RR)
–, circadian rhythm reversal in *Gryllus* 147:299 (Tomioka K, Chiba Y)
–, coactivation of *Locusta* antagonistic motoneurons 144:391 (Pearson KG, Robertson RM)
–, coding of sound signals in *Locusta* ventral cord 128:313 (Kalmring K, et al)
–, coding in *Tettigonia* auditory/vibrational neurons 139:267 (Kalmring K, Kühne K)
–, colonial thermoregulation in *Apis* 148:65 (Kronenberg F, Heller HC)
–, contrast in *Drosophila* vision 130:161 (Fischbach KF)
–, color discrimination in *Apis* 141:379 (Rose R, Menzel R)
–, color discrimination in dim light by *Deilephila* 129:257 (Schlecht P)
–, color opponent neurons of *Apis* 142:81 (Riehle A)
–, color receptors in *Deilephila* 123:239 (Schlecht P, et al)
–, color receptors in lepidopteran larval eyes 149:317 (Ichikawa T, Tateda H)
–, color vision in *Cataglyphis* 131:217 (Kretz R)
–, compensation for height in *Drosophila* groundspeed control 147:485 (David CT)
–, computation of interception courses in *Eristalis* and *Volucella* 125:191 (Collett TS, Land MF)
–, connexions between ocellar receptors and second-order neurons in dragonflies 149:389 (Simmons PJ)
–, connexions between *Schistocerca* ocellar neurons 147:401 (Simmons PJ)
–, constancy mechanisms in cercal systems of *Acheta* and *Gryllus* 137:287 (Rozhkova GI)
–, contact chemoreception in *Yponomeuta* larvae 134:265 (Drongelen W van)
–, contrast frequency-dependence of *Phaenicia* behavioral responses 145:241 (Eckert H, Hamdorf K)
–, control of *Peroptyx* flashing 144:277, 287 (Buck J, et al)
–, convergence of proprioceptive influences on *Locusta* coxal motoneurons 150:77 (Hustert R)
–, coordinating interneurons in locust ventilatory system 137:305 (Pearson KG)
–, coupling between *Locusta* photoreceptors 125:13 (Lillywhite PG)
–, course control in polarized light of *Drosophila* 139:177 (Wolf R, et al)
–, courtship song in *Drosophila* 129:85 (Schilcher F von, Hall JC); 130:87 (Ewing AW)
–, cryoprotectant polyol metabolism in *Eurosta* larvae 149:495 (Storey JM, Storey KB)
–, cuticular sclerotization in *Apis* 145:17 (Andersen SO, et al)
–, dark recovery of fly photoreceptors 122:215 (Moring J, Järvilehto M)
–, dependence of *Apis* life span upon flight performance and energy turnover 146:35 (Neukirch A)
–, deutocerebral interneurones in *Periplaneta* 145:447 (Burrows M, et al)
–, development of *Apis* cuticle 126:257 (Thompson PR, Hepburn HR)
–, development of *Gryllus* cercal nerve 149:277 (Dagan D, et al)
–, development of *Teleogryllus* auditory system 127:131 (Ball EE, Hill KG)
–, development of visual receptor potentials in *Calliphora* 150:529 (Järvilehto M, Finell N)
–, different oscillators in *Drosophila* 127:229 (Engelmann W, Mack J)
–, diglyceride-binding lipoprotein of *Locusta* hemolymph 136:1 (Gellissen G, Emmerich H)
–, directional hearing in *Tettigonia* 140:101 (Rheinlaender J, Römer H)
–, directional responses to sound in *Teleogryllus* interneurons 130:147, 151 (Boyan GS)
–, directional wind detection in first instar *Periplaneta* 147:471 (Dagan D, Volman S)
–, discrete potentials in *Locusta* ocellus 128:347 (Wilson M)
–, distance messages in *Apis* dances 123:339 (Esch H)
–, disturbance stridulation 135:259 (Masters WM)
–, diversity of *Nasonia* and *Sarcophaga* photoperiodic clocks 127:197 (Saunders DS)
–, double-peaked locomotor activity rhythms in *Leucophaea* and *Blaberus* 137:249 (Wiedenmann G)
–, drone bees fixate queen with dorsal frontal part of eyes 136:263 (Praagh JP van, et al)
–, dynamics of pigment migration in superposition eyes 143:491 (Dreisig H)
–, effect of juvenile hormone on *Apis* larval gravity orientation 137:7 (Ebert R)
–, effect of sugars on *Protophormia* water receptor 126:131 (Wieczorek H, Köppl R)
–, effects of ambient air pressure on *Apis* oxygen consumption 141:433 (Withers PC)
–, effects of blinding on *Carausius* epidermal ommochromes 130:331 (Bückmann D)
–, effects of L-glutamate on *Lucilia* muscle 148:281 (Robinson NL)

Insecta, efferent system of lateral ocellus in dragonflies 125:341 (Kondo H)
–, electrophysiological study on *Drosophila* paralytic mutant 144:409 (Benshalom G, Dagan D)
–, electrophysiology of *Calliphora* photoreceptors 129:19 (Hardie RC)
–, electrophysiology on *Drosophila* ocelli 126:15 (Hu KG, et al)
–, energetic costs of running in workers of *Formica* and *Camponotus* 137:151 (Jensen TF, Holm-Jensen I)
–, energetics of singing in *Anurogryllus* and *Oecanthus* 143:199 (Prestwich KN, Walker TJ)
–, epidermal cell cycle during *Pieris* last larval instar 136:11 (Lhonoré J, et al), 21 (Beydon P, et al)
–, equilibrium detecting system of *Acheta* 150:141 (Sakaguchi DS, Murphey RK)
–, escape behavior of *Periplaneta* 128:193 (Camhi JM, Tom W), 203 (Camhi JM, et al); 142:339 (Camhi JM, Nolen TG), 347 (Plummer MR, Camhi JM); 147:471 (Dagan D, Volman S)
–, *e*-vector orientation in *Apis* 125:1 (Rossel S, et al)
–, excitability of *Periplaneta* giant interneurons during walking 138:231, 241 (Daley DL, Delcomyn F)
–, extraocular photoreceptors on *Papilio* genitalia 148:483 (Arikawa K, Aoki K)
–, eye cleaning in *Gryllus* 129:247 (Honegger H-W, et al)
–, female sex pheromones in *Adoxophyes* 121:205 (Otter CJ Den)
–, femur-tibia-joint of *Extatosoma* 132:209 (Bässler U, Pflüger HJ)
–, field potentials and second-order neurons in *Phormia* visual system 126:297 (Zimmerman RP)
–, fields of view in *Apis* 143:17 (Seidl R, Kaiser W)
–, flicker response enhancement in *Drosophila* lamina 137:341 (Cosens D, LeBlanc N)
–, flight activity in *Periplaneta* mediated by dorsal giants 147:313 (Ritzmann RE, et al)
–, flight and antennal flight control in *Aglais* 145:249 (Gewecke M, Niehaus M), 257 (Niehaus M)
–, flight behaviour of *Schistocerca* 131:39, 49, 59 (Baker PS), 67 (Cooter RJ), 79, 89 (Baker PS, Cooter RJ)
–, flight motor pattern of *Manduca* 130:29 (Kammer AE, Kinnamon SC)
–, flight motor patterns in *Tipula* 134:177 (Heide G)
–, flight torque in *Drosophila* 130:113 (Heisenberg M, Wolf R)
–, food odor processing by *Periplaneta* olfactory receptors 144:509 (Selzer R)
–, food odor specific neurons in *Periplaneta* deutocerebrum 134:159 (Selzer R)
–, foraging movements of *Bombus* 135:113 (Waddington KD, Heinrich B)
–, foraging profitability and round dance correlates in *Apis* 148:297 (Waddington KD)
–, foveal fixation and tracking in *Tenodera* 139:307 (Rossel S)
–, frequency resolution of *Teleogryllus* ear 148:237 (Ehret G, et al)
–, functional organisation of locust ocelli 124:297 (Wilson M)
–, functions of *Cataglyphis* photoreceptors 137:63 (Mote MI, Wehner R)
–, generation of aerodynamic forces by *Locusta* forewings 142:127 (Nachtigall W), 135 (Pfau HK, Nachtigall W)
–, genetic dimorphism of trehalose sensitivity in *Drosophila* 147:433 (Tanimura T, et al)
–, geometrical optics of *Notonecta* eye 140:59 (Schwind R)
–, giant fibers in *Phaenicia* optic lobe 126:57 (Eckert H, Bishop LG)
–, giant interneurons of *Periplaneta* 130:39 (Delcomyn F, Daley DL)
–, giant vertical cells in *Calliphora* lobula plate 149:163 (Hengstenberg R, et al), 179 (Hengstenberg R)
–, glycogen phosphorylase in *Hyalophora* pupal fat body 131:321 (Ziegler R, et al)
–, glycogen turnover in *Apis* retina 150:69 (Evêquoz V, et al)
–, graded potentials in *Locusta* ocellus 124:317 (Wilson M)
–, gravity orientation information in *Areniwaga* 142:359 (Walthall WW, Hartman HB)
–, gravity reception in *Gryllus* 150:93 (Horn E, Bischof H-J)
–, gustatory responses of *Periplaneta* and *Musca* to methyl glycosides 141:297 (Jakinovich W, et al)
–, H1-neurone in *Phaenicia* third optic ganglion 135:29 (Eckert H)
–, halteres and head movements in *Lucilia* 136:361 (Sandeman DC)
–, head grooming in *Sphodromantis* 125:253 (Zack S)
–, hearing in *Teleogryllus* 121:79 (Hill KG, Boyan GS)
–, hemoglobin and gas bubble function in *Anisops* 142:515 (Wells RMG, et al)
–, hemolymph circulation in *Papilio* 139:145 (Wasserthal LT)
–, hemolymph circulation and tracheal ventilation in *Attacus* 145:1 (Wasserthal LT)
–, hemolymph clotting in *Leucophaea* 143:169 (Bohn H, et al)
–, hemolymph transport and tracheal ventilation in *Attacus* wings 147:27 (Wasserthal LT)
–, high-frequency auditory neuron in *Gryllus* central nervous system 146:351 (Popov AV, Markovich AM)
–, horizontal cells in *Phaenicia* lobula plate 143:511 (Eckert H)
–, horizontal movement detectors in *Apis'* 147:155 (DeVoe RD, et al)
–, hydrolysis of juvenile hormone in *Diatraea* larvae 144:205 (Mane SD, Chippendale GM)
–, hygroreceptor mechanism in *Periplaneta* 124:53 (Yokohari F)
–, hygro- and thermoreception in *Carausius* sensillum 132:149 (Tichy H)
–, impulse initiation in *Acheta* epithelial sensory neuron 142:237 (Erler G, Thurm U)
–, influence of moth hearing on bat echolocation 132:77 (Fenton MB, Fullard JH)
–, influence of vibration on *Gryllus* hearing 143:135 (Wiese K)
–, information transmission in *Calliphora* visual system 126:87 (French AS, Järvilehto M)
–, inhibition of *Acheta* giant interneurons 135:269 (Levine RB, Murphey RK)
–, inhibition between *Drosophila* motoneurones 144:345 (Tanouye MA, Wyman RJ)
–, inhibitory pathways in *Locusta* hindleg flexor motoneurons 146:507 (Steeves JD, Pearson KG)
–, interaction between retinula cells in *Boettcherisca* 125:209 (Mimura K)
–, interaction in *Leucophaea* circadian system 124:225 (Page TL)
–, intracellular optical physiology of *Apis* eye 137:193 (Bernard GD, Wehner R), 205 (Wehner R, Bernard GD)
–, ion gradient and photoreceptor sensitivity in superposition eyes 125:237 (Hamdorf K, et al)
–, ion transport by *Blaptica* sensory epithelium 134:131 (Küppers J, Thurm U)
–, ionic effects on *Calliphora* photoreceptor potentials 132:87 (Muijser H)
–, jumping and singing in *Schistocerca* and *Omocestus* 134:173 (Bässler U)
–, juvenile hormone esterases in Lepidoptera 148:1 (Jones D, et al)
–, juvenile hormone metabolism in *Drosophila* 132:319 (Klages G, Emmerich H)
–, K and Ca in *Gryllus* ommatidium 127:245 (Burovina IV, et al)
–, kynurenine 3-hydroxylase in *Ephestia* eggs 141:451 (Stratakis E)
–, labellar lobe spreading in *Phormia* 121:115 (Pollack GS)
–, landing response of *Calliphora* 138:253 (Eckert H, Hamdorf K)
–, large neurons in *Schistocera* neck connectives 147:379 (Williamson R, Burns MD)
–, large ocellar second order neurons of *Periplaneta* 149:215 (Mizunami M, et al)
–, larval ocelli of *Papilio* 139:41 (Ichikawa T, Tateda H)
–, leg motor neurons in *Periplaneta* 125:305 (Ritzmann RE, Camhi JM)
–, light adaptation of *Calliphora* visual cells 132:153 (Moring J, et al)
–, light adaptation in locust and fly photoreceptors 145:169 (Matić T, Laughlin SB)
–, light adaptation in peripheral visual system of *Calliphora* and *Hemicordulia* 128:319 (Laughlin SB, Hardie RC)
–, low temperature metabolism in *Eurosta* larva 144:183 (Storey KB, et al), 191 (Storey KB, Storey JM)

Insecta, magnetic field and gravity orientation in *Apis* 122:145 (Martin H, Lindauer M)
–, mechanical time resolution of moth, tettigoniid and cricket ears 143:289 (Schiolten P, et al), 297 (Larsen ON)
–, mechanoreceptor afferents in *Periplaneta* 150:121 (Dagan D, et al)
–, mechanosensory input on *Corydalus* ventilation 149:423 (Fitch GK, Kammer AE)
–, mechanotransduction in *Periplaneta* tactile spine 147:251 (French AS, Kuster JE)
–, medulla units of *Gryllus* 125:259; 136:191 (Honegger H-W)
–, model for inter-receptor coupling in *Cataglyphis* retina 139:277 (Martin FG, Mote MI)
–, modulated air current and *Locusta* flight motor 150:427 (Horsmann U, et al)
–, modulation of an electrical synapse in *Schistocerca* 137:233 (Rowell CHF, O'Shea M)
–, motoneuron variability in *Schistocerca* 134:55 (Kien J)
–, motoneurons of *Drosophila* 123:271 (Harcombe ES, Wyman RJ)
–, motor rhythms in discharge of *Gryllus* descending interneurons 148:209 (Otto D, Weber T)
–, movement-detecting pathway of *Lucilia* 140:1 (Srinivasan MV, Dvorak DR)
–, movement detectors in *Anax* ventral nerve cord 141:327 (Olberg RM)
–, movement learning of flying *Apis* 146:273 (Erber J)
–, movement responses in *Calliphora* medulla 138:93 (DeVoe RD)
–, movement sensitive neuron in *Notonecta* optic lobe 123:315 (Schwind R)
–, movement signalling interneurons in *Periplaneta* 150:185 (Delcomyn F)
–, multiple receptor proteins for *Drosophila* sweet taste 141:265 (Tanimura T, Shimada I)
–, muscle stimulation during flight in *Locusta* 128:57 (Möhl B, Nachtigall W)
–, muscle tension receptor in *Schistocerca* leg 131:247 (Theophilidis G, Burns MD)
–, mutant circadian clock in *Drosophila* 122:87 (Winfree AT, Gordon H)
–, mutant lobula plate giant interneurons in *Drosophila* 124:287 (Heisenberg M, et al)
–, Na and K secretion in *Aedes* Malpighian tubules 149:511 (Williams JC Jr, Beyenbach KW)
–, natural flight of *Locusta* 131:79, 89 (Baker PS, Cooter RJ); 141:233 (Baker PS, et al)
–, neck muscle motoneurons in *Schistocerca* 140:321 (Kien J)
–, neuromuscular transmission in *Musca* larvae 135:291, 299 (Irving SN, Miller TA)
–, neuronal activity during flight in *Locusta* 146:311 (Robertson RM, Pearson KG)
–, neuronal processing of sound in *Gryllus* prothoracic ganglion 146:161 (Wohlers DW, Huber F)
–, neurons of *Anax* and *Aeschna* median ocelli 139:25 (Patterson JA, Chappell RL)
–, neurophysiology of *Photuris* larval luminescence 148:503 (Christensen TA, Carlson AD)
–, neurosecretory material release in *Apis* brain 126:327 (Heinzeller T, Vogel H)
–, neurotransmitter mutants of *Drosophila* 137:83 (Greenspan RJ)
–, non-linearity and light adaptation in *Musca* photoreceptor 144:53 (Dubs A)
–, no twist in fly and bee rhabdomeres 134:109 (Ribi WA)
–, ocellar component of *Hemicordulia* flight equilibrium control 141:335 (Stange G)
–, ocelli and compound eyes in *Drosophila* phototaxis 135:85 (Hu KG, Stark WS)
–, olfactory receptor cell responses in *Ips* 121:343 (Mustaparta H, et al)
–, olfactory receptors of *Periplaneta* 128:227 (Sass H)
–, ommochrome synthesis in *Manduca* 147:1 (Hori M, Riddiford LM)
–, orientation of *Apis* to color patterns 139:225 (Glas HW van der)
–, orientation of *Apis* to ultraviolet light 134:151 (Edrich W, et al)
–, orientation of comb building by *Apis* 147:495 (De Jong D)
–, osmotropotaxis in *Drosophila* 147:479 (Borst A, Heisenberg M)
–, overwintering survival of *Dendroides* 136:53 (Duman JG)
–, oxygen consumption in *Periplaneta* rectum 138:347 (Tolman JH, Steele JE)
–, paired stimulation of *Periplaneta* giant interneurons 143:61 (Ritzmann RE, Pollack AJ), 71 (Ritzmann RE)
–, parallel encoding by *Anax* interneurons 142:27 (Olberg RM)
–, perturbation of *Carausius* walking 148:195 (Dean J, Wendler G)
–, phase resetting of *Culex* circadian oscillator 138:201 (Peterson EL)
–, pheromone production in *Danaus* 126:97 (Boppré M, et al)
–, pheromone sensitive neurons in *Antheraea* deutocerebrum 132:235 (Boeckh J, Boeckh V)
–, phonotaxis in *Gryllus* 148:431 (Schmitz B, et al)
–, phonotaxis in *Teleogryllus* 144:367 (Pollack GS, Hoy R)
–, photoperiodic induction of diapause in *Sarcophaga* 124:75; 127:197; 132:179; 145:421 (Saunders DS)
–, photopigment model in *Calliphora* 135:209 (Razmjoo S, Hamdorf K)
–, photoreceptor noise and oxidative metabolism in *Locusta* 142:181 (Payne R)
–, photoreceptor performance and membrane turnover in locusts 150:509 (Williams DS)
–, photoreceptor performance in *Tenodera* eye 131:95 (Rossel S)
–, photoreceptors in *Apis* orientation behavior 133:111 (Edrich W)
–, photostable pigment in fly photoreceptors 125:275 (Kirschfeld et al); 143:3 (McIntyre P, Kirschfeld K)
–, phototactic behavior of walking *Boettcherisca* 144:75 (Mimura K)
–, phototactic behavior of *Drosophila* 129:35 (Willmund R)
–, phototaxis in *Calliphora* 123:307 (Meyer HW)
–, physiology of *Phormia* feeding preferences 139:59 (Rachman NJ)
–, pigment migration in *Deilephila* retina 143:305 (Hamdorf K, Höglund G)
–, pigment migration in *Sympetrum* and *Anax* ocelli 129:199 (Stavenga DG, et al)
–, plurisegmental motor control in *Schistocerca* 140:303 (Kien J)
–, polarization sensitivity in *Notonecta* 150:87 (Schwind R)
–, polarized light detection in *Apis* rhabdomeres 137:281 (Ribi WA)
–, positional head reflexes in *Calliphora* 126:137 (Horn E, Lang H-G)
–, potassium sensitive ATPases in *Protophormia* labellum 148:303 (Wieczorek H)
–, potentials in *Apis* ocellar interneurons 143:427 (Milde J)
–, primary auditory fibers of *Teleogryllus* 143:129 (Hutchings M, Lewis B)
–, primary auditory neurons in *Gryllus* 137:27 (Esch H, et al)
–, properties of *Apis* optic lobe interneurons 137:215 (Hertel H)
–, properties of *Drosophila* flight motor neurons 150:295, 305 (Koenig JH, Ikeda K)
–, properties of macrochaetae in *Calliphora* 132:55 (Theiß J)
–, properties of *Manduca* developing pupal eye 150:153 (White RH, et al)
–, properties of *Phormia* wings 133:351 (Nachtigall W)
–, properties of R7 and R8 in *Calliphora* and *Musca* 133:23 (Hardie RC, et al)
–, proprioceptive function of *Locusta* chordotonal organ 147:389 (Hustert R)
–, prothoracic auditory neurons in *Gryllus* 126:183 (Popov AV, et al)
–, reception of *Ips* pheromone by the clerid beetle *Thanasimus* 150:371 (Hansen K)
–, receptive field of *Papilio* stemmata 146:191 (Ichikawa T, Tateda H)
–, receptive field patterns in *Boettcherisca* photoreceptors 141:349 (Mimura K)
–, receptors in spectral preference in *Drosophila* 121:241 (Hu KG, Stark WS)
–, recording the sounds of *Hydropsyche* larvae 140:159 (Silver SC, Halls JAT)
–, recovery from lesions in escape system of *Periplaneta* 146:291, 299 (Vardi N, Camhi JM)
–, red eye glow in pierid butterflies 132:1 (Ribi WA)

Insecta, reflex behaviour of *Carausius* 143:81 (Graham D, Wendler G)
–, resonance properties of *Corixa* physical gill 148:323 (Prager J, Streng R)
–, responses of *Periplaneta* giant interneurones to wind 121:307 (Westin J, et al)
–, role of polyols and nucleating agents in beetle freezing tolerance 140:227 (Zachariassen KE)
–, salt excreting organ of *Aëdes* 138:59 (Asakura K)
–, salt taste quality discrimination in *Calliphora* 133:53 (Maes FW, Bijpost SCA)
–, searching behavior of *Cataglyphis* 142:315 (Wehner R, Srinivasan MV)
–, sense organs in the femur of *Carausius* 121:99 (Bässler, U)
–, sensory adaptation in *Blaberus* mechanoreceptor 131:1 (Chapman KM, et al)
–, sensory deprivation of *Schistocerca* visual interneuron 135:191 (Bloom JW, Atwood HL)
–, sex-specific photoreceptors of *Musca* 145:139 (Hardie RC, et al)
–, sexual differences in *Teleogryllus* calling song recognition 146:217 (Pollack GS)
–, sexual dimorphism in bibionid fly visual system 150:379, 395 (Zeil J)
–, simultaneous color contrast in *Apis* 139:165 (Neumeyer C)
–, single electrode studies on *Papilio* retina 150:271 (Horridge GA, et al)
–, single photon signals in locust eye 122:189 (Lillywhite, PG)
–, sorbitol in *Bombyx* diapause eggs 147:21 (Furusawa T, et al)
–, sound communication in *Apis* 132:11 (Kilbert K)
–, sound production in *Gromphadorhina* 132:27 (Nelson MC)
–, sound production and hearing in *Cicadetta* 142:271 (Popov AV)
–, spatial integration in compound eyes of flies 146:321 (Dubs A)
–, specialized photoreceptors in *Apis* compound eye 141:19 (Labhart T)
–, spectral effects of pupil in *Musca* photoreceptors 146:145 (Vogt K, et al)
–, spectral light deprivation in *Apis* 147:365 (Hertel H)
–, spectral mechanisms of *Photinus* eye 135:21 (Lall AB, et al)
–, spectral sensitivities of *Bombus* compound eye and median ocellus 139:261 (Meyer-Rochow VB)
–, spectral sensitivity of *Apis* phototactic behaviour 122:27 (Kaiser W, et al)
–, spectral sensitivity of *Calliphora* monopolar neurons 123:335 (Moring J)
–, spectral sensitivity of dragonfly ocellar neurons 144:91 (Mobbs PG, et al)
–, spectral sensitivity of fly photoreceptors 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al), 41 (Smola U, Meffert P); 134:95 (Bernard GD, Stavenga DG)
–, spectral sensitivity of landing *Calliphora* 150:319 (Tinbergen J, Abeln RG)
–, spectral sensitivity of *Photuris* compound eye 147:195 (Lall AB, et al)
–, spectrosensitometry of *Lethrus* photoreceptors 142:95 (Gribakin FG)
–, splitting of *Teleogryllus* circadian rhythm 150:51 (Wiedenmann G)
–, stretch receptor in *Pieris* 130:191 (Sugawara T)
–, stretch receptor action potentials in *Carausius* 122:45 (Finlayson LH, Orchard I)
–, stridulation of *Gryllus* 136:247 (Koch UT)
–, stridulation in *Oecanthus* 129:269 (Sismondo E)
–, stridulation of *Orchelimum* 126:343 (Nielsen ET)
–, stridulatory movements in Acrididae 122:53 (Helversen O von, Elsner N)
–, structural changes in *Schistocerca* light-deprived rhabdom 144:357 (Bloom JW, Atwood HL)
–, sugar reception in *Periplaneta* 124:353 Wieczorek H)
–, sugar reception by *Protophormia* water receptor 138:167 (Wieczorek H)
–, sugar receptors in *Protophormia* taste hairs 149:207 (Wieczorek H, Köppl R)
–, sugar sensitive cell in *Entomoscelis* 132:167 (Mitchell BK, Gregory P); 146:393 (Sutcliffe JF, Mitchell BK)
–, survival of *Phormia* in non-24-h LD cycles 127:191 (Saint Paul U von, Aschoff J)
–, synaptic transmission by *Schistocerca* ocellar neurons 145:265 (Simmons PJ)
–, taste cell response in *Calliphora* 128:1 (Molen JN van der, et al)
–, tegula inputs to *Schistocerca* flight motoneurons 133:299 (Kien J, Altman JS)
–, temporal resolving in *Locusta* photoreceptors 144:61 (Howard J)
–, tetrachromatic visual system of *Spodoptera* 129:235 (Langer H, et al)
–, thermal hysteresis producing protein in *Oncopeltus* 142:539 (Patterson JL, et al)
–, thermoregulation in *Bombyx* 129:315 (Ploye H)
–, three-dimensional visual course control in *Drosophila* 145:321 (Blondeau J, Heisenberg M)
–, tibial receptor neurons in *Decticus* 127:109 (Kalmring K, et al)
–, tonotopic organisation of *Caedicia* auditory receptors 147:461 (Oldfield BP)
–, tooth impact rate in *Omocestus* 124:27 (Skovmand O, Pedersen SB)
–, transduction in a *Locusta* multipolar joint sensillum 150:207 (Kuster JE, French AS)
–, transepithelial voltages across sensory epithelia 134:119 (Thurm U, Wessel G)
–, transmitter at *Lucilia* neuromuscular junctions 144:139 (Robinson NL)
–, transplantation of a time-signal in *Apis* 124:193 (Martin U, et al)
–, trehalose absorption in *Bombyx* ovaries 131:333 (Shimada S, Yamashita O)
–, triacylglycerol synthesis in *Stomoxys* 147:49 (Venkatesh K, Morrison PE)
–, tryptophan 2,3-dioxygenase in *Carausius* 132:351 (Stratikis E, Schartau W)
–, tryptophan metabolism in *Carausius* 137:123 (Stratakis E)
–, tryptophan 2,3 dioxygenase in *Protophormia* 124:117 (Schartau W)
–, turning and righting in *Geotrupes* 136:279 (Frantsevich LI, Mokrushov PA)
–, twist in *Apis* rhabdomeres 142:1 (Wehner R, Meyer E)
–, twisted rhabdomeres in dipteran eyes 133:291 (Smola U, Tscharntke H); 142:43 (Smola U, Wunderer H)
–, two-tone suppression of an auditory neuron in *Gryllus* brain 144:117 (Boyan GS)
–, ventilation during prey capture in *Cordulegaster* larvae 128:341 (Weber T, Caillière L)
–, vertical-horizontal neuron in *Phaenicia* lobula plate 149:195 (Eckert H)
–, vibration reception in *Barathra* caterpillars 125:67 (Tautz J)
–, vibratory interneurons in *Nezara* central nervous system 139:87 (Čokl A, Amon T)
–, vibroreceptors in *Nezara* legs 150:261 (Čokl A)
–, 'visual attention' in *Drosophila* 140:69 (Wolf R, Heisenberg M)
–, visual conditioning of fixed *Apis* 135:217 (Erber J, Schildberger K)
–, visual interneurons in *Apis* brain 121:65 (Erber J, Menzel R); 134:253 (Guy RG, et al)
–, visual interneurons in *Periplaneta* optic lobe 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
–, visual interneurons in *Phormia* optic lobe 141:123 (Eriksson ES)
–, visual learning in a *Drosophila* mutant 127:29 (Bicker G, Reichert H)
–, visual movement detection of *Musca* 134:45 (Pick B, Buchner E)
–, visual orientation in walking *Drosophila* 148:471 (Bülthoff H, et al)
–, visual pattern discrimination in *Drosophila* 146:229 (Mimura K)
–, visual pigments of *Drosophila* 140:275 (Stark WS, Johnson MA)
–, visual reflex interaction in *Syritta* 140:145 (Collett TS)
–, visual scanning in *Apis* 130:173 (Anderson AM)
–, visually mediated snapping in *Myrmecia* 121:33 (Via SE)
–, voluntary flight of *Syritta* 138:271 (Collett TS)
–, walking and rowing in *Gerris* 123:43, 51 (Bowdan E)
–, water transport in *Periplaneta* rectum 138:357 (Steele JE, Tolman JH)
–, wavelength discrimination in *Drosophila* 150:31 (Hernández de Salomon C, Spatz H-C)

Insecta, wavelength-specific behavior of *Pieris* 149:325 (Kolb G, Scherer C)
–, wavelength specific behavior of *Trialeurodes* 144:83 (Coombe PE)
–, wind-sensitive interneuron of locusts 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
–, wing movements and aerodynamic force generation in *Calliphora* 150:251 (Nachtigall W, Roth W)
–, wingstroke frequencies in dragonflies 144:229 (May ML)
Interactions, lateral, in a compound eye 132:159 (Marčelja S)
Interaural pathway, role in owl sound localization 144:299 (Moiseff A, Konishi M)
–, pathways, avian, sound transmission through – 136:183 (Rosowski JJ, Saunders JC)
Interception courses, computation by hoverflies 125:191 (Collett TS, Land MF)
Interlimb coordination in lobster during walking 139:293 (Chasserat C, Clarac F)
Interneuron, olfactory excitation of – in lobster brain 150:129 (Hamilton KA, Ache BW)
–, bimodal, in the locust tritocerebrum 126:317 (Bacon J, Tyrer M)
–, descending, responses to sound in crickets 130:151 (Boyan GS)
–, mechanosensory, central input to crayfish – 134:1 (Marzelli GA, Wilkens LA)
–, position-sensitive, in the cricket 150:141 (Sakaguchi DS, Murphey RK)
–, visual, sensory deprivation of locust – 135:191 (Bloom JW, Atwood HL)
–, wind-sensitive, in locusts 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
Interneurons, feedback inhibition of crayfish – 149:251 (Fricke RA, et al)
–, air movement sensitive, in the locust 145:369 (Pflüger H-J, Tautz J)
–, ascending, directional responses to sound in crickets 130:137 (Boyan GS)
–, auditory, of cricket 121:1 (Casaday GB, Hoy RR), 127:11 (Wohlers DW, Huber F); 146:351 (Popov AV, Markovich AM)
– in bee optic lobes 137:215 (Hertel H)
–, cerebral, and escape swimming in *Tritonia* 121:325 (Getting PA)
–, chemosensory, in the lobster 130:63 (Ache BW, Fuzessery ZM)
–, coactivating antagonistic motoneurons in locust 144:391 (Pearson KG, Robertson RM)
–, coordinating, in locust ventilatory system 137:305 (Pearson KG)
–, corollary discharge, in a cockroach 150:185 (Delcomyn F)
–, deutocerebral, of cockroach 145:447 (Burrows M, et al)
–, giant, afferent pathways to earthworm – 140:351 (Smith PH, Mittenthal JE)
–, –, central excitation of cockroach – 130:39 (Delcomyn F, Daley DL)
–, –, dorsal, mediating flight activity in cockroach 147:313 (Ritzmann RE, et al)
–, –, in a *Drosophila* mutant lobula plate 124:287 (Heisenberg M, et al)
–, –, exciting cockroach leg motor neurons 125:305 (Ritzmann RE, Camhi JM)
–, –, inhibition of cricket – 135:269 (Levine RB, Murphey RK)
–, –, modulation of excitability during walking 138:231, 241 (Daley DL, Delcomyn F)
–, –, paired stimulation in cockroach – 143:61 (Ritzmann RE, Pollack AJ), 71 (Ritzmann RE)
–, –, recovery from lesions in escape system of cockroach 146:299 (Vardi N, Camhi JM)
–, –, responses to song in cricket – 141:311 (Kämper G, Dambach M)
–, –, signalling gravity orientation information in cockroach 142:359 (Walthall WW, Hartman HB)
– involved in crayfish abdominal posture 148:159 (Miall RC, Larimer JL)
–, local, in crayfish terminal abdominal ganglion 149:145 (Reichert H, et al)
–, multimodal, in a flatworm 147:171 (Solon MH, Koopowitz H)
–, ocellar, potentials in bee – 143:427 (Milde J)
–, plurisegmental, controlling movements in locusts 140:303 (Kien J)
–, sensory, in crayfish 148:143 (Sigvardt KA, et al)
–, spinal, synaptic transmission in lamprey – 143:423 (Homma S)
–, statocyst, in crayfish 149:287, 301 (Takahata M, Hisada M)
–, swim-initiating, in leech 148:253, 265 (Weeks JC)
–, ventral nerve cord –, parallel encoding by dragonfly – 142:27 (Olberg RM)
–, vibratory, in bug central nervous system 139:87 (Čokl A, Amon T)
–, visual, in bee brain 121:65 (Erber J, Menzel R); 134:253 (Guy RG, et al)
–, –, in cockroach optic lobe 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
–, –, crayfish sustaining fibers 146:175 (Kirk MD, et al)
–, –, in fly optic lobe 141:123 (Eriksson ES)
–, wind sensitive, of *Periplaneta* 121:307 (Westin J, et al)
Inter-receptor coupling, model for – in ant retina 139:277 (Martin FG, Mote MI)
Intestinal absorption of water and NaCl in a tilapia 146:1 (Mainoya JR)
– transport of lysine in the freshwater shrimp 124:169 (Brick RW, Ahearn GA)
Intestine, effects of dehydration on electrolyte and water content in antelope – 135:165 (Skadhauge E, et al)
–, effects of ouabain on chloride movements across eel – 145:73 (Ando M)
–, ion and water transport in seawater eel – 138:87 (Ando M)
–, sodium cotransport system in flounder – 135:175 (Eveloff J, et al)
Intrapulmonary receptors, sensitivity to CO_2 132:69 (Kuhlmann WD, Fedde MR)
Invertebrate vision, photopigment model 135:209 (Razmjoo S, Hamdorf K)
Iodine metabolism, effect of hypophysectomy on snake – 131:297 (Wong CC, Chiu KW)
Ion, see also electrolyte, ionic
– balance in dehydrated antelope intestine 135:165 (Skadhauge E, et al)
– concentration of inner ear lymph 126:1 (Peterson SK, et al)
– fluxes in crab gills, inhibitor effects on – 133:219 (Cameron JN)
– – in a crab 131:285 (Robinson GD, Potts WTW)
– regulation, acid-base status in hypocapnic and normocapnic fish plasma 140:249 (Thomas S, et al)
– –, adrenergic regulation of chloride secretion 145:29 (Mendelsohn SA, et al)
– –, chloride extrusion in pinfish isolated gill 141:471 (Farmer LL, Evans DH)
– –, chloride permeability of eel intestine 145:73 (Ando M)
– – in the cod 124:157 (Fletcher CR)
– –, effects of calcium and pH on trout gill potentials 126:277 (McWilliams PG, Potts WTW)
– –, effect of lanthanum on sodium and chloride fluxes in goldfish gills 129:145 (Eddy FB, Bath RN)
– –, effects of pH and salt content on cladoceran sodium balance 129:289 (Potts WTW, Fryer G)
– –, hyperosmotic readjustment of a crab 128:147 (Bedford JJ, Leader JP)
– –, interrelations of Na^+- and Cl^--influxes in snail 148:131 (With ND de, Schors RC van der)
– – in molluscan muscle cells 132:141 (Kobayashi M, Ando M)
– –, Na and K secretion in mosquito Malpighian tubules 149:511 (Williams JC Jr, Beyenbach KW)
– –, Na uptake by mussel gills 143:185 (Dietz TH, Graves SY)
– –, Na^+, K^+ATPase activity in seawater and freshwater adapted flounder gills 147:93 (Stagg RM, Shuttleworth TJ)
– –, osmotic shock and Na, K, and Cl levels in crab axons 129:365 (Kévers C, et al)
– –, salt gland control in salt adapted ducks 129:301 (Deutsch H, et al)
– – of shrimp hemocyanin 143:261 (Miller KI, Holde KE Van)
– transport in eel intestine 138:87 (Ando M)
– – in harbor seal kidney 149:19 (Hong SK, et al)
– – in mosquito larval salt-excreting organ 138:59 (Asakura K)
– –, active, by a sensory epithelium 134:131 (Küppers J, Thurm U)
Ionic balance in a crab 131:285 (Robinson GD, Potts WTW)

Ionic dependence of *Noctiluca* action potential 134:137 (Nawata T, Sibaoka T)
– – of pigment migrations in crayfish retina 144:35 (Frixione E, Aréchiga H)
– differences in neuromuscular transmission 135:291 (Irving SN, Miller TA)
– excretion, effect of cytochalasin on fish gill – 141:523 (Pic P, Lahitte P)
– mechanisms of action potentials in silkworm neurons 140:43 (Miyazaki S)
– permeabilities of *Stentor* membrane 146:537 (Wood DC)
– regulation, effects of copper on – by fish gills 149:83 (Stagg RM, Shuttleworth TJ)
– – of stretch receptor action potentials 122:45 (Finlayson LH, Orchard I)
– – of trout during transfer to seawater 134:351 (Bath RN, Eddy FB)
– requirements for lobster neuron bursting activity 145:191 (Gola M, Selverston A)
– transport in fish gill, effect of calcium 141:511 (Pic P, Maetz J)
Ions, effects on blowfly photoreceptor potentials 132:87 (Muijser H)
Ips, olfactory receptor cell responses 121:343 (Mustaparta H, et al)
–, reception of pheromone by a predaceous clerid beetle, *Thanasimus* 150:371 (Hansen K)
Ipsdienol, receptor cell responses in *Ips* 121:343 (Mustaparta H, et al)
Ipsenol, receptor cell responses in *Ips* 121:343 (Mustaparta H, et al)
Iris, sympathetic nervous control of cod – 138:149 (Nilsson S)
Iron binding protein in crab blood 148:101 (Huebers HA, et al)
– metabolism in a spider 127:349 (Lee MY, et al)
Isopoda, see *Cirolana, Glyptonotus, Mesidotea*

J

Jamming, influence on electrolocation 125:285 (Matsubara J, Heiligenberg W); 149:339 (Matsubara JA)
– Avoidance Response of *Eigenmannia* 127:267 (Heiligenberg W, et al); 136:113 (Heiligenberg W, Bastian J), 135 (Bastian J, Heiligenberg W), 153 (Partridge BL, Heiligenberg W); 142:295 (Heiligenberg W, Partridge BL)
– – – in gymnotoid pulse species 124:211 (Heiligenberg W, et al); 136:165 (Baker CL Jr); 138:173 (Heiligenberg W)
– – –, neural basis of a sensory filter 145:153 (Partridge BL, et al)
Japanese quail, see *Coturnix*
JAR, see Jamming Avoidance Response
Jasus, leg coordination during walking 139:293 (Chasserat C, Clarac F)
–, proprioceptive inputs in legs 130:251 (Vedel JP, Clarac F)
Jellyfish, see *Carybdea*
Joint receptor, multipolar, sensory transduction in locust – 150:207 (Kuster JE, French AS)
Jumping spider, see *Evarcha, Plexippus*
Juvenile hormone, effect on gravity orientation of bee larvae 137:7 (Ebert R)
– –, hydrolysis in diapausing and non-diapausing corn borer larvae 144:205 (Mane SD, Chippendale GM)
– –, regulation of ommochrome synthesis in tobacco hornworm by – 147:1 (Hori M, Riddiford LM)
– – esterases in Lepidoptera 148:1 (Jones D, et al)
– – metabolism in *Drosophila* 132:319 (Klages G, Emmerich H)

K

K, see also potassium
– -induced excitability of *Paramecium* ciliary reversal 127:39 (Hildebrand E)
– secretion in mosquito Malpighian tubules 149:511 (Williams JC Jr, Beyenbach KW)
Kidney, see also renal
–, effects of anoxia and low pH on organic ion transport in seal – 149:19 (Hong SK, et al)
–, function in a treefrog 133:211 (Shoemaker VH, Bickler PE)
–, sodium cotransport systems in flounder – 135:175 (Eveloff J, et al)
Killifish, see *Fundulus*
Koala, see *Phascolarctos*
Kryptopterus, chemical synapse in electroreceptors 126:147 (Roth A)
–, sensitivity of electroreceptors 147:329 (Roth A)
–, synaptic transmission in electroreceptor 142:371 (Teeter JH, Bennett MVL)
Kynurenic acid content during development in stick insect 137:123 (Stratakis E)
Kynurenine 3-hydroxylase in *Ephestia* eggs 141:451 (Stratakis E)

L

Labellar lobe spreading in *Phormia* 121:115 (Pollack GS)
Labyrinth, interrelations between auditory and vestibular receptors in frog – 133:141 (Caston J, Gribenski A)
Lacerta, extraretinal photoreceptors 130:277 (Hartwig HG, Veen T van)
–, mechanics and structure of lung 138:321 (Perry SF, Duncker H-R)
–, postural mechanisms 131:235 (Meyer DL, et al)
Lactate and recovery from exhaustion in lungless salamander 128:101 (Feder ME, Olsen LE)
– dehydrogenase, interspecific variation in K_m of NADH for M_4 – 137:115 (Greaney GS, Somero GN)
– –, role in *Tubifex* energy metabolism 130:337 (Hoffmann KH, et al)
– dehydrogenases, pressure adaptations in shallow- and deep living fishes 129:295 (Siebenaller JF, Somero GN)
– –, properties in fishes 125:129, 135 (Yancey PH, Somero GN)
– metabolism in lizards 147:79 (Gleeson TT)
Lactation, effect on rabbit blood flow and cardiac output 138:31 (Jones CS, Parker DS)
Lagodon, chloride extrusion in isolated gill 141:471 (Farmer LL, Evans DH)
Lama, function of tubiform forestomach 132:337 (Engelhardt W v, et al)
–, phosphate binding by hemoglobin 136:67 (Bauer C, et al)
Lamina, spatial integration of signals in fly – 146:321 (Dubs A)
– ganglionaris, flicker response enhancement in fly – 137:341 (Cosens D, LeBlanc N)
Lampetra, synaptic transmission in spinal interneurons 143:423 (Homma S)
Lamprey, see Cyclostomata
Landing response, excitatory and inhibitory components in fly – 138:253 (Eckert H, Hamdorf K)
Lanthanum, effect on goldfish gill ion exchange mechanisms 129:145 (Eddy FB, Bath RN)
Larus, nictitating membrane 125:335 (Sivak JG, et al)
Laryngeal nerve activity during bat sound emission 143:317 (Schuller G, Rübsamen R), 323 (Rübsamen R, Schuller G)
– – transection, effect on squirrel monkey calls 123:23 (Jürgens U, et al)
– neurotomy, selective, and control of bat phonation 145:529 (Suthers RA, Fattu JM)
Laser Doppler vibrometry, vibration transmission through crab legs measured by – 150:483 (Aicher B, et al)
– vibrometry, tympanal vibrations of cricket ear measured by – 123:193 (Michelsen A, Larsen ON)
Lateral line, role in fish schooling 135:315 (Partridge BL, Pitcher TJ)
– –, role in taxis response to water waves in clawed toad 148:535 (Elepfandt A)
– – central pathways of *Xenopus* 136:203 (Plassmann W)
– – lobe of goldfish 127:61 (Caird DM)
– – –, neurons in *Apteronotus* – responding to moving objects 144:481 (Bastian J)
– – –, posterior, cell types in electric fish – 149:339 (Matsubara JA)
– – –, –, electroreceptive afferents in gymnotoid fish 148:287 (Heiligenberg W, Dye J)
– – –, –, neural correlates of JAR in *Eigenmannia* 136:135 (Bastian J, Heiligenberg W); 145:153 (Partridge BL, et al)
– – organ, object detection in blind cave fish by – 143:369 (Campenhausen C v, et al)

Lateral line system, frequency discrimination of *Aplocheilus* 143:485 (Bleckmann H, et al)
– – –, single neuromast induced prey localization in *Aplocheilus* 149:399 (Müller U, Schwartz E)
Latex particles in crayfish hemolymph 132:363 (Merrill DP, et al)
Learning, higher order –, in a terrestrial mollusc 144:1 (Sahley C, et al)
–, movement –, of flying bees 146:273 (Erber J)
–, selective and differential, in a gastropod mollusc 138:157 (Davis WJ, et al)
–, visual, in bees 135:217 (Erber J, Schildberger K)
–, –, in *Drosophila* mutants 127:29 (Bicker G, Reichert H); 133:283 (Reichert H, Bicker G)
Leech, see *Haementeria, Hirudo, Macrobdella*
Leg, see also walking leg
– reflexes, dynamic organisation in the lobster 123:289 (Ayers JL Jr, Davis WJ)
Leguan, see *Iguana*
Lemming, see *Lemmus*
Lemmus, oxygen consumption by skeletal muscle 128:185 (Grubb B, Folk GE Jr)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Lemniscomys, heat production 148:77 (Haim A)
Lens, crystalline, of *Rutilus* 121:135 (Srozyński S)
Lepidophyma, respiratory and cutaneous water loss 149:25 (Mautz WJ)
Lepidoptera, see also *Adoxophyes, Aglais, Agrotis, Antheraea, Attacus, Barathra, Bombyx, Ctenusa, Cycnia, Cyligramma, Danaus, Davea, Deilephila, Diatraea, Ephestia, Eumonoda, Hyalophora, Mamestra, Manduca, Papilio, Pieris, Seirarctica, Sphingomorpha, Spodoptera, Yponomeuta*, and moth
–, juvenile hormone esterases 148:1 (Jones D, et al)
–, pigment migration in moth superposition eyes 143:491 (Dreisig H)
Lepomis, behavioral thermoregulation and preoptic lesions 129:193 (Nelson DO, Prosser CL)
Leptograpsus, retinal acid phosphatase 149:353 (Couet HG de, Blest AD)
–, rhabdom synthesis 142:19; 148:313 (Stowe S)
–, eye-scanning during walking 124:249 (Sandeman DC)
–, regionalization in the eye 123:299 (Sandeman DC)
Leptonychotes, aerobic versus anaerobic diving metabolism 138:335 (Kooyman GL, et al)
Leptosynapta, muscle contractions 136:103 (Prosser CL, Mackie GO)
Lethrus, astroorientation 121:253 (Frantsevich L, et al)
–, spectrosensitometry of photoreceptors 142:95 (Gribakin FG)
Leucaspius, eye positions 128:241 (Graf W, Meyer DL)
Leucocytes, effect of photoperiod and stress on distribution in a newt 125:205 (Bennett MF, Reap LE)
Leucophaea, circadian periodicity 146:255 (Roberts SK)
–, double-peaked locomotor activity rhythm 137:249 (Wiedenmann G)
–, hemolymph clotting 143:169 (Bohn H, et al)
–, interactions in the circadian system 124:225 (Page TL)
Leydig cells, physiology and anatomy of leech – 146:379 (Keyser KT, et al)
L-glutamate, effects on insect muscle resistance 148:281 (Robinson NL)
Lichmera, energy metabolism 137:157 (Collins BG, et al)
Life span, dependence of bee – on flight performance and energy consumption 146:35 (Neukirch A)
Light, tonic effect on squirrel monkey circadian system 129:43 (Sulzman FM, et al)
– adaptation and changes in intensity-response function in insect photoreceptors 145:169 (Matić T, Laughlin SB)
– – in fly photoreceptor 144:53 (Dubs A)
– – in insect peripheral visual systems 128:319 (Laughlin SB, Hardie RC)
– –, onset in fly visual cells 132:153 (Moring J, et al)
– -dark adaptation in brine shrimp compound eye 143:389 (Nilsson D-E, Odselius R)
– – –, transformation in cytoplasmic structure of crayfish retinula cells 145:179 (Tsutsumi V, et al)
– deprivation, effect on locust rhabdom 144:357 (Bloom JW, Atwood HL)
– sensitivity of *Aplysia* rhinophores and eyes 136:257 (Jacklet JW)
Ligumia, gill sodium uptake 143:185 (Dietz TH, Graves SY)
Limaria, energy production during swimming 129:361 (Baldwin J, Lee AK)
Limax, brain-implant stimulation of development 143:311 (McCrone EJ, et al)
–, duplex system in the retina 133:125 (Suzuki H, et al)
–, endocrinology of maturation 133:117 (McCrone EJ, Sokolove PG)
–, higher ording learning 144:1 (Sahley C, et al)
–, photoperiodic control of maturation 125:317 (Sokolove PG, McCrone EJ)
Limulus, components of ventral photoreceptor light response 141:303 (Maaz G, et al)
–, coordination of heart and gill rhythms 124:267 (Watson WH III, Wyse GA)
–, gill cleaning behavior 141:67, 77 (Watson III WH), 87 (Wyse GA, et al)
–, hemocyanin 130:283 (Markl J, et al)
–, slow potentials in optic fibers 141:239 (Behrens ME, Fahy JL)
Liolaemus, postural mechanisms 131:235 (Meyer DL, et al)
Lipid catabolism in a planarian 146:107 (Barrett J, Butterworth PE)
– composition of scorpion epicuticle, seasonal changes of – 129:319 (Toolson EC, Hadley NF)
– content during starvation in a snail 123:149 (Streit B)
– turnover of membranes in thermally acclimated trout 149:11 (Hazel JR, Neas NP)
Lipogenesis, hepatic, in thermally acclimated trout 134:321 (Hazel JR, Prosser CL)
Lipoprotein, diglyceride-binding, in locust hemolymph 136:1 (Gellissen G, Emmerich H)
Litoria, neural temperature compensation 142:411 (Macdonald JA)
Littorina, alanopine dehydrogenase in foot muscle 149:57 (Plaxton WC, Storey KB)
Liver, pyruvate carboxylase from trout – 143:281 (Suarez RK, Hochachka PW)
– cells, see also hepatocytes
– –, gluconeogenesis in eel – 132:343 (Hayashi S, Ooshiro Z)
– mitochondria, properties of trout – 143:269, 275 (Suarez RK, Hochachka PW)
Lizard, see *Anolis, Calotes, Cnemidophorus, Dipsosaurus, Gekko, Gerrhonotus, Lacerta, Sceloporus, Uromastix, Varanus*
Llama, see *Lama*
Lobster, see *Homarus, Jasus, Palinurus, Panulirus*
Lobula, properties of interneurons in bee – 137:215 (Hertel H)
– plate giant interneurons in a *Drosophila* mutant 124:287 (Heisenberg M, et al)
– –, giant vertical cells in fly – 149:163 (Hengstenberg R, et al), 179 (Hengstenberg R)
– –, horizontal cells in fly – 143:511 (Eckert H)
– –, vertical-horizontal neuron in blowfly – 149:195 (Eckert H)
Locomotion, activity patterns in snail motoneurones 142:259 (Brace RC, Quicke DLJ)
–, central control of swimming in a jellyfish 133:357 (Satterlie RA)
–, central excitation of cockroach giant interneurons 130:39 (Delcomyn F, Daley DL)
–, central program for turtle scratch reflex 140:287 (Stein PSG, Grossman ML)
–, cilia motor neurons in *Tritonia* 128:259 (Audesirk G)
–, ciliary reversal in *Paramecium* 127:39 (Hildebrand E)
–, coactivation of locust antagonistic motoneurons 144:391 (Pearson KG, Robertson RM)
–, cockroach escape behavior 128:193 (Camhi JM, Tom W), 203 (Camhi JM, et al); 142:339 (Camhi JM, Nolen TG), 347 (Plummer MR, Camhi JM)

Locomotion, command fiber activation of flexor motoneurons in lobster abdomen 148:515 (Thompson CS, Page CH)
–, compensation for height in fly ground-speed control 147:485 (David CT)
–, control of crayfish uropod steering movements 139:243 (Yoshino M, et al)
–, control of phasmid femur-tibia-joint 132:209 (Bässler U, Pflüger HJ)
–, convergence of proprioceptive influences on locust coxal motoneurons 150:77 (Hustert R)
–, corollary discharge interneurons in a cockroach 150:185 (Delcomyn F)
–, crayfish escape behavior 121:145 (Wine JJ, Hagiwara G), 173, 187 (Wine JJ); 142:281 (Reichert H, et al)
–, dynamic organisation of lobster walking leg reflexes 123:289 (Ayers JL Jr, Davis WJ)
–, effect of eyestalk hormones on lobster gastric mill activity 141:363 (Fleischer AG)
–, electrophysiological study on temperature-sensitive paralytic mutant of *Drosophila* 144:409 (Benshalom G, Dagan D)
–, energetic costs of running in ant workers 137:151 (Jensen TF, Holm-Jensen I)
–, equilibrium detecting system in the cricket 150:141 (Sakaguchi DS, Murphey RK)
–, escape swimming in *Tritonia* 121:325 (Getting PA)
–, excitation of cockroach leg motor neurons by giant interneurons 125:305 (Ritzmann RE, Camhi JM)
–, feedback inhibition of crayfish interneurons 149:251 (Fricke RA, et al)
–, femoral chordotonal organs and leg movements in insects 134:173 (Bässler U)
–, flight activity in cockroach mediated by dorsal giant interneurons 147:313 (Ritzmann RE, et al)
–, flight and antennal flight control in a butterfly 145:249 (Gewecke M, Niehaus M), 257 (Niehaus M)
–, flight behaviour of the locust 131:39, 49, 59 (Baker PS), 67 (Cooter RJ), 79, 89 (Baker PS, Cooter RJ); 141:233 (Baker PS, et al)
–, flight motoneurons of *Drosophila* 123:271 (Harcombe ES, Wyman RJ)
–, flight motor patterning in crane fly 134:177 (Heide G)
–, flow adaptation of penguin during swimming under water 137:17 (Nachtigall W, Bilo D)
–, forward walking in a crab 136:301 (Sleinis S, Silvey GE)
–, function of common inhibitory neurone in crab walking legs 143:111 (Ballantyne D, Rathmayer W)
–, gliding flight of *Petaurus* 133:89, 339 (Nachtigall W)
–, halteres and head movements in a fly 136:361 (Sandeman DC)
–, head grooming after foreleg amputation in a mantis 125:253 (Zack S)
–, heart rate during – in mammals 127:337 (Baudinette RV)
–, induction of swimming in lamprey 136:337 (Poon MLT)
–, influence of modulated air current on locust flight motor 150:427 (Horsmann U, et al)
–, inhibition between *Drosophila* flight motoneurons 144:345 (Tanouye MA, Wyman RJ)
–, inputs to locust neck muscle motoneurons 140:321 (Kien J)
–, interneurons involved in crayfish abdominal posture 148:159 (Miall RC, Larimer JL)
–, lacewing avoidance behavior 131:121 (Glesen J, Miller LA)
–, leg coordination during lobster walking 139:293 (Chasserat C, Clarac F)
–, load compensation in crayfish abdomen 123:349 (Page CH)
–, locust forewings as generators of aerodynamic forces 142:127 (Nachtigall W), 135 (Pfau HK, Nachtigall W)
–, magnet effect in lobster pyloric rhythm 129:5 (Ayers JL Jr, Selverston AI)
–, maturation of moth flight motor pattern 130:29 (Kammer AE, Kinnamon SC)
–, Mauthner-initiated response patterns in goldfish 144:521 (Eaton RC, et al)
–, modulation of cockroach giant interneuron excitability during walking 138:231, 241 (Daley DL, Delcomyn F)
–, motoneuron interactions in crayfish claw control 124:237 (Wiens TJ, Atwood HL)
–, motoneuron pattern formation in crayfish 141:183 (Kirk MD, Glantz RM)
–, motoneuron variability in locusts 134:55 (Kien J)
–, motor responses to paired stimulation in cockroach giant interneurons 143:61 (Ritzmann RE, Pollack AJ), 71 (Ritzmann RE)
–, motor rhythms in discharge of cricket descending interneurons 148:209 (Otto D, Weber T)
–, muscle stimulation during locust flight 128:57 (Möhl B, Nachtigall W)
–, neck position in turning and hatching leg movements in chicken 145:497 (Bekoff A, Kauer JA)
–, neural mechanisms of reversal of crayfish uropod steering movement 145:471 (Yoshino M, et al)
–, neural pathways and command systems of crayfish reflex-evoked behaviors 143:27 (Williams BJ, Larimer JL)
–, neuromuscular strategies in crustacean leg joint during walking 128:81 (Ayers J, Clarac F)
–, neuronal activity during locust flight 146:311 (Robertson RM, Pearson KG)
–, neuronal control of – in hydrozoan medusae 150:195 (Satterlie RA, Spencer AN)
–, parameters of tethered flight in siskins 127:123 (Woike M, Gewecke M)
–, parameters of wing movements and aerodynamic force generation in blowfly 150:251 (Nachtigall W, Roth W)
–, perturbations of stick insect walking by obstruction of leg protraction 148:195 (Dean J, Wendler G)
–, plurisegmental motor control in locusts 140:303 (Kien J)
–, properties of *Drosophila* flight motor neurons 150:295, 305 (Koenig JH, Ikeda K)
–, properties of fly wings during flight 133:351 (Nachtigall W)
–, properties of winter flounder Mauthner cell 143:541 (Zottoli SJ)
–, proprioceptive function in locust mesothoracic coxa 147:389 (Hustert R)
–, proprioceptive gating of inhibitory pathways in locust motoneurons 146:507 (Steeves JD, Pearson KG)
–, proprioceptive inputs in lobster walking legs 130:251 (Vedel JP, Clarac F)
–, reflex antennal movements in spiny lobster 147:259 (Neil DM, et al), 269 (Barnes WJP, Neil DM)
–, reflex behaviour and innervation of stick insect tergo-coxal muscles 143:81 (Graham D, Wendler G)
–, reflex movements in terrapin hind limbs 125:351; 130:241 (Valk-Fai T, Crowe A)
–, reflexes mediated by nonimpulsive muscle receptor in crabs 142:103, 113 (Cannone AJ, Bush BMH)
–, repetitive activation of crab antennular motor units 142:189 (Snow PJ)
–, role of cuticular stress detector in the crab 125:79 (Findlay I)
–, role of locust wind-sensitive interneuron in flight 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
–, role of wing muscles in *Drosophila* courtship song 130:87 (Ewing AW)
–, scratch reflex 140:287 (Stein PSG, Grossman ML); 142:227 (Randall W); 145:477 (Bakker JGM, Crowe A); 146:401 (Stein PSG, et al)
–, sense organs in the femur of the stick insect 121:99 (Bässler U)
–, stridulatory movements in grasshoppers 122:53 (Helversen O von, Elsner N)
–, swimming movements by electrical stimulation of turtle spinal cord 124:203 (Stein PSG)
–, synaptic basis of leech swim initiation 148:253, 265 (Weeks JC)
–, synaptic inhibition in lamprey spinal neurons during fictive swimming 147:189 (Kahn JA)
–, tegula inputs to locust flight motoneurons 133:299 (Kien J, Altman JS)
–, temperature effects on long term neuromuscular facilitation in crayfish claw 143:53 (Jacobs JR, Atwood HL)
–, temporal organization of hydrozoan swimming activity 136:219 (Leonard JL)
–, turning and righting in *Geotrupes* 136:279 (Frantsevich LI, Mokrushov PA)

Locomotion, voltage-dependent ciliary activation in a ciliate 150:223 (Peyer JE de, Machemer H)
–, walking and rowing in *Gerris* 123:43, 51 (Bowdan E)
–, walking leg motor neurones in a scorpion 140:31 (Bowerman RF, Burrows M)
–, wing stroke frequencies in dragonflies 144:229 (May ML)
Locust, see *Locusta, Schistocerca, Vanada*
Locusta, aerodynamic and mechanical properties of antennae 139:357 (Gewecke M, Heinzel H-G)
–, air movement sensitive hairs and interneurons 145:369 (Pflüger H-J, Tautz J)
–, auditory pathway in the ventral cord 126:25 (Kalmring K, et al)
–, auditory processing in metathoracic ganglion 144:305 (Römer H, et al)
–, cholinergic activities in CNS 141:271 (Breer H)
–, coactivation of antagonistic motoneurons 144:391 (Pearson KG, Robertson RM)
–, coding of sound signals in ventral cord 128:213 (Kalmring K, et al)
–, convergence of proprioceptive influences on coxal motoneurons 150:77 (Hustert R)
–, coordinating interneurons of ventilatory system 137:305 (Pearson KG)
–, coupling between photoreceptors 125:13 (Lillywhite PG)
–, diglyceride-binding lipoprotein of hemolymph 136:1 (Gellissen G, Emmerich H)
–, effect of oxidative metabolism on photoreceptor noise 142:181 (Payne R)
–, forewings as generators of aerodynamic forces 142:127 (Nachtigall W), 135 (Pfau HK, Nachtigall W)
–, functional organisation of ocelli 124:297; 128:347 (Wilson M)
–, graded potentials in the ocellus 124:317 (Wilson M)
–, influence of modulated air current on flight motor 150:427 (Horsmann U, et al)
–, light adaptation in photoreceptors 145:169 (Matić T, Laughlin SB)
–, muscle stimulation during flight 128:57 (Möhl B, Nachtigall W)
–, natural flight 131:79, 89 (Baker PS, Cooter RJ); 141:233 (Baker PS, et al)
–, neuronal activity during flight 146:311 (Robertson RM, Pearson KG)
–, photoreceptor performance and membrane turnover 150:509 (Williams DS)
–, proprioceptive function of chordotonal organ 147:389 (Hustert R)
–, proprioceptive gating of inhibitory pathways in motoneurons 146:507 (Steeves JD, Pearson KG)
–, single photon signals in photoreceptor 122:189 (Lillywhite PG)
–, temporal resolving power of photoreceptors 144:61 (Howard J)
–, transduction in a multipolar joint sensillum 150:207 (Kuster JE, French AS)
–, wind-sensitive interneurone 150:439 (Bacon J, Möhl B), 453 (Möhl B, Bacon J)
Loligo, energy metabolism in mantle muscle 123:169 (Storey KB, Storey JM)
–, photoreceptor responses 122:241 (Pinto LH, Brown JE)
Lota, circadian rhythms 136:215 (Kavaliers M)
Luciferin binding protein in *Gonyaulax* 128:251 (Sulzman FM, et al)
Lucilia, effects of L-glutamate on muscle 148:281 (Robinson NL)
–, halteres and head movements 136:361 (Sandeman DC)
–, movement-detecting pathway 140:1 (Srinivasan MV, Dvorak DR)
–, spatial integration in compound eye 146:321 (Dubs A)
–, transmitter at neuromuscular junctions 144:139 (Robinson NL)
Lugworm, see *Arenicola*
Lumbricus, afferent pathways to giant interneurons 140:351 (Smith PH, Mittenthal JE)
–, neural temperature compensation 142:411 (Macdonald JA)
Luminance patterns, spatial and temporal, visual sensitivity of ground squirrels to – 136:291 (Jacobs GH, et al)
Luminescence, see also bioluminescence
–, control of flashing in fireflies 144:277, 287 (Buck J, et al)
–, neurophysiology of firefly larval – 148:503 (Christensen TA, Carlson AD)
Lungs, mechanics, structure and evolution of – 138:321 (Perry SF, Duncker H-R)
–, phospholipids in washings from frog – 139:117 (Vergara GA, Hughes GM)
Lutreolina, body temperature and metabolism 125:115 (McNab BK)
Lymnaea, effect of oxygen on gravity orientation 142:51 (Janse C)
–, enzymes in hepatopancreas 129:129 (Sollock RL, et al)
–, multipolar neurons 147:503 (Haydon PG, Winlow W)
–, Na^+ and Cl^--influxes 148:131 (With ND de, Schors RC van der)
–, photo-orientation 149:363 (Duivenboden YA van)
–, sensory systems in gravity orientation 145:311 (Janse C)
Lyriform slit sense organ of a spider 125:37 (Barth FG, Bohnenberger J); 125:45 (Seyfarth E-A); 142:391 (Bohnenberger J); 147:423 (Seyfarth E-A, et al); 148:175 (Barth FG, Geethabali)
Lysine transport across the mucosal border in shrimp midgut 124:169 (Brick RW, Ahearn GA)

M

Macrobdella, calcium depletion depolarizations of Retzius cell membrane 150:499 (Yang J, Lent CM)
–, Leydig cells 146:379 (Keyser KT, et al)
Macrobrachium, intestinal lysine transport 124:169 (Brick RW, Ahearn GA)
Macrochaetae, mechanics and electrophysiology of fly – 132:55 (Theiß J)
Macropipus, coagulation 142:473 (Ghidalia W, et al)
–, hemocyanin subunits 133:167 (Markl J, et al)
Macropus, cardio-respiratory allometry 145:95 (Dawson TJ, Needham AD)
Macrozoarces, energy demand in white muscle 141:425 (Driedzic WR, et al)
–, myoglobin content and enzyme activities in heart 149:67 (Driedzic WR, Stewart JM)
Magnesium, effect on calcium movements in rat muscle 126:233 (Huddart H, Saad KHM)
Magnet effect in lobster neuronal oscillators 129:5 (Ayers JL Jr, Selverston AI)
Magnetic compass orientation in lake migrating salmon fry 137:143 (Quinn TP)
– field, detection by ampullae of Lorenzini 126:333 (Brown HR, Ilyinsky OB)
– –, effect on gravity orientation of *Apis* 122:145 (Martin H, Lindauer M)
– – orientation in cave salamanders 121:273 (Philips JB)
– – stimulation, crayfish statocyst response to – 123:1 (Ozeki M, et al)
– fields, effect on sound communication in bees 132:11 (Kilbert K)
Maia, coagulation 142:473 (Ghidalia W, et al)
–, hemocyanin subunits 133:167 (Markl J, et al)
Malaclemys, effects of salt loading on salt gland function 145:101 (Cowan FBM)
Malic enzyme, role in *Tubifex* energy metabolism 130:337 (Hoffmann KH, et al)
Malpighian tubules, Na and K secretion in mosquito – 149:511 (Williams JC Jr, Beyenbach KW)
Mamestra, color receptors in larval eyes 149:317 (Ichikawa T, Tateda H)
Mammalia, absorption in rabbit caecal pouch 133:205 (Leng-Peschlow E, Marty J)
–, acidosis and Ca distribution in rat myocardium 143:245 (Gesser H, Poupa O)
–, acoustic behavior in the field of four bat species 142:67 (Miller LA, Degn HJ)
–, acoustic fovea in *Rhinolophus* 132:47 (Schuller G, Pollak G)
–, acoustic imaging in bat sonar 135:61 (Simmons JA, Stein RA)
–, acoustic reflexes in *Myotis* middle ear and laryngeal muscles 124:61 (Jen PH-S, et al)
–, activity of mouse in cold 123:91 (Barnett SA, et al)
–, activity rhythms in blind mice 149:333 (Scheuch GC, et al)
–, adaptive echolocation sounds of *Rhinopoma* 144:559 (Habersetzer J)
–, amino acid uptake in HeLa cells 140:267 (Wheatley DN, Walker E)

Mammalia, antidiuretic effects of fish urophysial extracts in rat 135:183 (Ichikawa T)
–, audiogram and masked thresholds of *Rousettus* 136:227 (Suthers RA, Summers CA)
–, auditory evoked potentials in *Trichechus* 148:547 (Bullock TH, et al)
–, auditory midbrain properties in *Eptesicus* 147:351 (Jen PH-S, Schlegel PA)
–, auditory neurons in *Myotis* superior olivary complex 128:47 (Jen PH-S)
–, auditory neurophysiology of *Molossus* inferior colliculus 131:137 (Vater M, et al), 147 (Vater M, Schlegel P)
–, behavioral responses of *Trachops* to sonic frequencies 150:413 (Ryan MJ, et al)
–, blood count cycle in mouse 149:307 (Bennett MF, Pomeroy GC)
–, brainstem auditory responses in *Rousettus* 146:283 (Belknap DB, Suthers RA)
–, buffering capacity and anaerobic potential of muscle 143:191 (Castellini MA, Somero GN)
–, Ca and acidosis of rat myocardium 127:307 (Gesser H, Poupa O)
–, calcium movement in rat muscle 126:233 (Huddart H, Saad KHM)
–, carbohydrate and torpor in *Citellus* 147:129 (Zimmerman ML)
–, cardiac output and blood flow in lactating rabbit 138:31 (Jones CS, Parker DS)
–, cardio-respiratory allometry in *Trichosurus* and *Macropus* 145:95 (Dawson TJ, Needham AD)
–, cardiovascular responses to exercise in *Trichosurus* 124:143 (Baudinette RV, et al)
–, cervical-ocular and optokinetic interaction in rabbit 134:11 (Denia A, et al)
–, circadian pacemaker in rat SCN 146:153 (Inouye ST, Kawamura H)
–, circadian periodicity in *Mesocricetus* 123:265 (Fitzgerald K, et al)
–, circadian rhythm of sleep and activity in the rat 128:37 (Borbély AA, Neuhaus HU)
–, circadian rhythm of *Taphozous* 127:239 (Subbaraj R, Chandrashekaran MK)
–, circadian rhythm variants in mice 148:137 (Peleg L, et al)
–, circannual cycles in *Spermophilus* 136:349, 355 (Mrosovsky N); 150:233 (Joy JE, Mrosovsky N)
–, cochlear structure and function of house-mouse 122:65 (Ehret G, Frankenreiter M)
–, control of heart rate in *Spalax* 142:533 (Storier D, et al)
–, daily torpor in *Peromyscus* 125:157 (Lynch GR, et al)
–, dehydration effects in *Rhynchotragus* 135:165 (Skadhauge E, et al)
–, development of hearing in *Antrozous* 126:169 (Brown PE, et al)
–, development of mouse circadian pacemaker 143:527 (Davis FC, Menaker M)
–, diving physiology in *Leptonychotes* 138:335 (Kooyman GL, et al)
–, echolocation in *Asellia* 131:161 (Gustafson Y, Schnitzler HU)
–, echolocation by *Plecotus* 122:201 (Simmons JA, O'Farrell MJ)
–, echolocation by *Tadarida* 125:291 (Simmons JA, et al)
–, effect of brief light pulses on *Phodopus* photoperiod 148:529 (Hoffmann K)
–, effect of pinealectomy on *Spermophilus* hibernation 146:501 (Phillips JA, Harlow HJ)
–, effects on *Peromyscus* water balance 133:241 (Esher RJ, Wolfe JL)
–, effects of pinealectomy in *Peromyscus* 144:145 (Glass JD, Lynch GR)
–, effects of sleep-deprivation in the rat 133:71 (Borbély AA, Neuhaus HU)
–, endogenous annual rhythms of *Eutamias* 141:369 (Kenagy GJ)
–, endogenous annual rhythms in *Spermophilus* 135:333 (Kenagy GJ)
–, endogenous control of annual reproductive cycle in *Ammospermophilus* 130:131 (Kenagy GJ, Bartholomew GA); 142:251 (Kenagy GJ)
–, energetics in neotropical marsupials 125:115 (McNab BK)
–, energy metabolism of rat muscle 142:465 (Nicol CJM, Johnston IA)
–, entrainment to periodic feeding in rats 143:401 (Stephan FK)
–, evaporative water loss in *Canomys* 139:135 (Welch WR)
–, evaporative water loss in *Peromyscus* and *Mus* 128:177 (Edwards RM, Haines H)
–, extraretinal photoreception in *Phodopus* 130:277 (Hartwig HG, Veen T van)
–, genetic analysis of mouse circadian rhythms 139:121 (Possidente B, Hegmann JP)
–, gliding flight of *Petaurus* 133:89, 339 (Nachtigall W)
–, gonadal steroid hormones and hibernation in *Mesocricetus* 135:107 (Hall V, Goldman B)
–, gustatory responses of gerbils to methyl glycosides 141:297 (Jakinovich W, et al)
–, hemoglobin-oxygen affinity in mouse erythrocytes 129:333 (Wells RMG)
–, hearing and Doppler shift compensation in *Rhinolophus* and *Hipposiderus* 139:349 (Schuller G)
–, heart rate during locomotion 127:337 (Baudinette RV)
–, heat production in *Acomys* 142:445 (Haim A, Borut A)
–, heat production in *Rhabdomys* and *Lemniscomys* 148:77 (Haim A)
–, hypothermia in *Notiosorex* 137:173 (Lindstedt SL)
–, inferior collicular neuron responses of paleotropical bats to acoustic stimuli 146:423 (Jen PHS, Suthers RA)
–, inferior colliculus of the mouse 127:175 (Willott JF, Urban GP)
–, inferior colliculus neurons of *Rhinolophus* 125:217 (Möller J, et al), 227 (Möller J); 141:249 (Vater M); 146:423 (Jen PHS, Suthers RA)
–, influence of moth hearing on bat echolocation 132:77 (Fenton MB, Fullard JH)
–, infradian cycles in *Glis* 137:315 (Mrosovsky N, et al)
–, inner ear lymph of the cat 126:1 (Peterson SK, et al)
–, intraspecific differences in *Spermophilus* hibernation pattern 148:83 (French AR)
–, K_m of NADH for M_4-LDH of rabbit 137:115 (Greaney GS, Somero GN)
–, laryngeal nerve and calls in *Saimiri* 123:23 (Jürgens U, et al)
–, laryngeal nerve activity in *Rhinolophus* during pulse emission 143:317 (Schuller G, Rübsamen R), 323 (Rübsamen R, Schuller G)
–, light effect on *Saimiri* circadian system 129:43 (Sulzman FM, et al)
–, metabolic rate, water turnover and thermoregulation in *Procavia* 138:315 (Rübsamen K, Kettembeil S)
–, metabolism and heat balance in *Phascolarctos* 134:293 (Degabriele R, Dawson TJ)
–, metabolism and thermoregulation in Mongolian mammals 145:127 (Weiner J, Górecki A)
–, middle ear of the mouse 146:517 (Saunders JC, Summers RM)
–, muscle properties in brown and domesticated rat 126:263 (Melichna J, et al)
–, N-acetyltransferase activity rhythm in rat pineal gland 145:539 (Illnerová H, Vaněček J)
–, neural and behavioral changes in the rat by exposure to an odor 124:259 (Laing DG, Panhuber H)
–, nitrogen catabolism in *Spermophilus* 149:565 (Bintz GL, Strand CE)
–, nitrogen metabolism and urea kinetics in *Procavia* 138:307 (Hume ID, et al)
–, organic ion transport in *Phoca* kidney 149:19 (Hong SK, et al)
–, orientation signals during avoidance maneuvers of *Eptesicus* and *Pteronotus* 148:389 (Jen PHS, Kamada T)
–, oxygen consumption of *Galago* 126:241 (Perret M)
–, oxygen consumption by rat and *Lemmus* skeletal muscles 128:185 (Grubb B, Folk GE Jr)
–, phase response curves for dark pulses in *Mesocricetus* 146:411 (Boulos Z, Rusak B)
–, phosophate binding by *Lama* and *Camelus* hemoglobin 136:67 (Bauer C, et al)
–, photoperiod in *Mesocricetus* 132:277 (Ellis GB, Turek FW)
–, photoperiods in the rat 124:1 (Borbély AA, Neuhaus HU)

Mammalia, potassium induced relaxation of vascular smooth muscle 135:357 (Webb, RC, Bohr DF)
–, properties of hamster skeletal muscle 122:385 (Vyskocil F, Gutmann E)
–, respiratory properties of *Halichoerus* blood 149:49 (Lapennas GN, Reeves RB)
–, seasonal control of *Phodopus* energy requirements 142:429 (Heldmaier G, Steinlechner S)
–, seasonal rhythm of cat scratch reflex 142:227 (Randall W)
–, seasonal thermogenesis and cold resistance in *Phodopus* 149:1 (Heldmaier G, et al)
–, seasonality of circadian rhythms in *Ammospermophilus* and *Dipodomys* 128:21 (Kenagy GJ)
–, selective laryngeal neurotomy in *Eptesicus* 145:529 (Suthers RA, Fattu JM)
–, short-term feeding rhythms in *Microtus* 127:215 (Daan S, Slopsema S)
–, single unit responses in *Rhinolophus* cochlear nucleus 149:369 (Vater M)
–, specializations in *Pteronotus* auditory periphery 131:255 (Pollak G, et al)
–, splitting of *Mesocricetus* circadian activity 145:405 (Earnest DJ, Turek FW)
–, splitting of rat circadian rhythms 134:75 (Boulos Z, Terman M)
–, subglottic pressure during *Eptesicus* echolocation 143:465 (Fattu JM, Suthers RA)
–, target detection by *Eptesicus* 145:431 (Kick SA)
–, temperature sensitivity of sodium pump in hibernator red cells 138:43 (Willis JS, et al)
–, thermogenesis in *Spermophilus* 140:235 (Abbotts B, Wang LCH)
–, thermoreception in *Desmodus* 146:223 (Kürten L, Schmidt U)
–, thermoregulation in *Eutamias* 125:175 (Chappell MA, et al)
–, thermoregulation in mice 123:185 (Lacy RC)
–, thermoregulation in *Pedetes* 133:187 (Müller EF, et al)
–, thermoregulation in *Ursus* 146:63 (Best RC)
–, thermoregulation, respiration and sleep in *Sarcophilus* 140:241 (Nicol SC, Maskrey M)
–, tubiform forestomach of the llama 132:337 (Engelhardt W v, et al)
–, tryptophan metabolism in the mouse 124:189 (Shetta AS, et al)
–, ultrasonic cries of *Myotis* 134:165 (Mogensen F, Møhl B)
–, ultrasound recognition in house mice 148:245 (Ehret G, Haack B)
–, visual properties of rat and cat suprachiasmatic neurons 135:349 (Groos GA, Mason R)
–, visual sensitivity of *Spermophilus* 136:291 (Jacobs GH, et al)
–, vocalization and auditory processing in *Rhinolophus* 132:39 (Schuller G)
–, water and energy metabolism in *Procavia* 131:303 (Rübsamen K, et al)
Man, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Manatee, see *Trichechus*
Manduca, circadian rhythm of visual sensitivity 150:165 (Bennett RR)
–, ion gradient and photoreceptor sensitivity 125:237 (Hamdorf K, et al)
–, maturation of flight motor pattern 130:29 (Kammer AE, Kinnamon SC)
–, ommochrome synthesis 147:1 (Hori M, Riddiford LM)
–, rhodopsins, photoreceptor structure and receptor potentials in developing pupal eye 150:153 (White RH, et al)
Mantis, see *Sphodromantis*, *Tenodera*
–, shrimp, see *Scylla*
Marila, accommodation in the eye 137:267 (Levy B, Sivak JG)
Marmosa, body temperature and metabolism 125:115 (McNab BK)
Marmota, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Marphysa, properties of erythrocruorins 123:177 (Weber RE, et al)
Marsupials, see also *Macropus*, *Petaurus*, *Phascolarctos*, *Sarcophilus*, *Trichosurus*
–, heart rate during locomotion 127:337 (Baudinette RV)
–, neotropical, comparative energetics 125:115 (McNab BK)
Masking, auditory, in treefrogs 141:1 (Ehret G, Capranica RR), 13 (Ehret G, Gerhardt HC)
Mastigoproctus, hemocyanin 130:283 (Markl J, et al)
Mating call, recognition in treefrogs 144:9, 17 (Gerhardt HC)
– – selectivity in frog thalamus and midbrain 150:333 (Fuzessery ZM, Feng AS)
Maturation, photoperiodic control in *Limax* 125:317 (Sokolove PG, McCrone FJ)
–, sexual, endocrinology of slug – 133:117 (McCrone EJ, Sokolove PG)
Mauthner cell, initiation of response patterns in goldfish 144:521; 145:485 (Eaton RC, et al)
– –, properties of winter flounder – 143:541 (Zottoli SJ)
– cells, directional sensitivity to vibration in zebrafish larvae 140:337 (Eaton RC, Kimmel CB)
– –, role in initiating fast-start behavior of zebrafish larvae 140:343 (Kimmel CB, et al)
Mechanoreception, abdominal proprioceptive reflex in crayfish 122:289 (Lunteren E van)
–, afferent pathways to earthworm giant interneurons 140:351 (Smith PH, Mittenthal JE)
–, air movement sensitive hairs and interneurons in locust 145:369 (Pflüger H-J, Tautz J)
–, antennal proprioception in rock lobster 145:505 (Rossi-Durand C, Vedel JP)
–, central input to crayfish interneuron 134:1 (Marzelli GA, Wilkens LA)
–, cercal nerve responses to wind in the cockroach 133:97 (Westin J); 103 (Dagan D, Camhi JM)
–, constancy mechanisms in cricket cercal systems 137:287 (Rozhkova GI)
–, dendritic impulse initiation in an epithelial sensory neuron 142:237 (Erler G, Thurm U)
–, detection of stationary objects in a blind cave fish 143:369 (Campenhausen C v, et al)
–, directional sensitivity of zebra fish Mauthner cells to vibration 140:337 (Eaton RC, Kimmel CB)
–, displacement-sensitive pathway in crayfish 147:447 (Wiese K, Schultz R)
–, effect of temperature on mechanotransduction in cockroach tactile spine 147:251 (French AS, Kuster JE)
–, femoral chordotonal organ and leg movements in insects 134:173 (Bässler U)
–, "free" nerve endings in head skin of amphibian embryos 135:341 (Roberts A)
–, frequency discrimination of a surface-feeding fish 143:485 (Bleckmann H, et al)
–, frequency modulation in water surface waves and prey localization of topminnow 145:331 (Bleckmann H, Schwartz E)
–, function of *Aplysia* statocyst sensory cells 150:359 (Janse C)
–, functions of hair receptors in crab statocyst 137:51 (Janse C)
– in a gastropod mollusc 149:221, 235 (Bicker G, et al)
–, influence of cercal and antennal afferences on cricket head position 150:93 (Horn E, Bischof H-J)
–, inhibition in cricket cercal interneurons 135:269 (Levine RB, Murphey RK)
–, intrapulmonary receptors in the bullfrog 132:69 (Kuhlmann WD, Fedde MR)
–, ionic regulation of action potentials in stretch receptor axon 122:45 (Finlayson LH, Orchard I)
–, locust antennae as air-current sense organs 139:357 (Gewecke M, Heinzel H-G)
–, magnetic field detection by skate ampullae of Lorenzini 126:333 (Brown HR, Ilyinsky OB)
–, membrane potentials in a protozoan 146:537 (Wood DC)
–, muscle tension receptor in locust leg 131:247 (Theophilidis G, Burns MD)
– in mussel gill lateral ciliated cells 145:351 (Murakami A, Machemer H)
–, neurons in somatosensory cortex responding to vibrissae displacement 125:29 (Hellweg FC)
–, nociceptors in dogfish gills 130:1 (Poole CA, Satchell GH)
–, nucleus praeeminentialis in catfish brainstem 145:299 (Tong SL)

Mechanoreception, physiology of slit sense organ in a spider 125:37 (Barth FG, Bohnenberger J), 45 (Seyfarth E-A); 142:391 (Bohnenberger J); 147:423 (Seyfarth E-A, et al); 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
–, post activity effects on cockroach cercal afferents 150:121 (Dagan D, et al)
–, properties of fly macrochaetae 132:55 (Theiß J)
–, proprioceptors of *Balanus* 123:229 (Clark JV, Dorsett DA)
–, protective reflex of a bryozoan 137:297 (Wiese K, et al)
–, receptors signalling gravity orientation information in cockroach 142:359 (Walthall WW, Hartman HB)
–, responses of *Aplocheilus* to water surface waves 140:163 (Bleckmann H)
–, responses of cricket cercal receptors and interneurons to airstreams 129:51 (Tobias M, Murphey RK)
–, role of prosternal organ in walking fly head position 126:137 (Horn E, Lang H-G)
–, role of statocysts in crab eye reflex 130:95 (Janse C, Sandeman DC)
–, sense organs in stick insect femur 121:99 (Bässler U)
–, sensory mechanisms of cricket eye cleaning 129:247 (Honegger H-W, et al)
–, single neuromast induced prey localization in a surface feeding fish 149:399 (Müller U, Schwartz E)
–, statocyst interneurons in crayfish 149:287, 301 (Takahata M, Hisada M)
–, statocyst response patterns to magnetic field stimulation 123:1 (Ozeki M, et al)
–, stretch receptor in butterfly bursa copulatrix 130:191 (Sugawara T)
–, tactile recordings from catfish ramus recurrens facialis 147:217 (Davenport CJ, Caprio J)
–, temperature effect on crayfish stretch receptor 133:257 (Moser H, et al)
–, temperature sensitive receptors in pigeon skin 135:201 (Necker R, Reiner B)
–, transduction in a locust multipolar joint receptor 150:207 (Kuster JE, French AS)
–, transfer characteristics of single units in a compound slit sense organ 142:391 (Bohnenberger J)
–, trigeminal sensory neurons of lamprey 123:329 (Matthews G, Wickelgren WO)
–, vibration detection in sand by a scorpion 131:23, 31 (Brownell P, Farley RD)
–, vibration reception by caterpillar thoracal hairs 125:67 (Tautz J)
–, vibration sensitive receptors in spiders 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
–, vibroreceptors in bug legs 150:261 (Čokl A)
–, viscoelastic coupling and sensory adaptation in the cockroach 131:1 (Chapman KM, et al)
–, voltage and time characteristics of potassium current in ciliate receptor 141:173 (Deitmer JW)
–, water vibration receptor on crayfish antenna 144:533 (Tautz J, et al); 149:409 (Masters WM, et al)
–, wind-sensitive interneurons in the cockroach 121:307 (Westin J, et al)
Mechanoreceptive signal processing in carp mesencephalic trigeminal neurons 141:157 (Jüch PJW)
Mechanoreceptor channels in *Paramecium* 135:233 (Ogura A, Machemer H)
– potentials in *Stylonychia* 127:255 (Peyer JE de, Machemer H)
Mechanoreceptors, cercal, and kicking response in *Gryllus* 122:9 (Dumpert K, Gnatzy W)
–, complex, in *Tritonia* 141:101, 111 (Audesirk G, Audesirk T)
–, oral, of *Tritonia* 130:71 (Audesirk TE), 79 (Audesirk TE, Audesirk GJ)
Mechanosensory input on hellgrammite ventilation 149:423 (Fitch GK, Kammer AE)
– integration in crayfish abdominal nervous system 148:143 (Sigvardt KA, et al)
– neurons, feedback inhibition of crayfish – 149:251 (Fricke RA, et al)
– system of insects 149:277 (Dagan D, et al)
Medulla, frequency representation in frog dorsal nucleus 143:339 (Fuzessery ZM, Feng AS)
–, frequency selectivity of anuran – 150:107 (Fuzessery ZM, Feng AS)
–, movement sensitive cells in fly – 138:93 (DeVoe RD)
–, oral responses from chicken solitary complex 130:259 (Gentle MJ)
–, properties of interneurons in bee – 139:215 (Hertel H)
–, receptive fields of neurons in cricket – 136:191 (Honegger H-W)
– units, sustained and transient responding, in the cricket 125:259 (Honegger H-W)
Medusa, see *Polyorchis*
Meganyctiphanes, optics of eyes 130:49 (Land MF, et al)
Melanophore potentials in the spinal stoneloach 131:13 (Collis CS)
Melatonin, effect on daily torpor in a mouse 125:157 (Lynch GR, et al)
–, effect on lizard circadian rhythmicity 130:317; 141:537 (Underwood H)
–, effect on salamander compass orientation 136:235 (Adler K, Taylor DH)
–, synchronization of starling circadian rhythm by – 127:209 (Gwinner E, Benzinger I)
Melopsittacus, amplitude modulation thresholds 143:383 (Dooling RJ, Searcy MH)
–, critical bands 125:359 (Saunders JC, et al)
Membrane, mechanoreceptor channels in *Paramecium* – 135:233 (Ogura A, Machemer H)
– excitability in *Stylonychia* 121:15 (Peyer JE de, Machemer H)
– lipids of developing chick heart 125:151 (Kutchai H, et al)
– permeabilities and membrane potentials in *Stentor* 146:537 (Wood DC)
– structural changes in molluscan red blood cells 138:299 (Amende LM, Pierce SK)
– turnover in thermally acclimated trout 149:11 (Hazel JR, Neas NP)
Memory consolidation, effect of arginine on mantis – 147:231 (D'Alessio G, et al)
Mercenaria, cholinergic response in the heart 129:61 (Elliott EJ)
Merganser, see *Mergus*
Mergus, accommodation in the eye 137:267 (Levy B, Sivak JG)
–, nictitating membrane 125:335 (Sivak JG, et al)
Meriones, gustatory responses to methyl glycosides 141:297 (Jakinovich W, et al)
–, metabolism and thermoregulation 145:127 (Weiner J, Górecki A)
Mesencephalon, respiratory neurons in carp – 133:131 (Ballintijn CM, et al)
Mesidotea, freezing resistance 125:165 (Yingst DR)
Mesocricetus, gonadal steroid hormones and hibernation 135:107 (Hall V, Goldman B)
–, homeostasis of circadian periodicity 123:265 (Fitzgerald K, et al)
–, phase response curves for dark pulses 146:411 (Boulos Z, Rusak B)
–, photoperiod and locomotor activity 132:277 (Ellis GB, Turek FW)
–, properties of skeletal muscle 122:385 (Vyskocil F, Gutmann E)
–, splitting of circadian activity 145:405 (Earnest DJ, Turek FW)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Metabolic adaptation to temperature in juvenile snakes 142:489 (Davies PMC, Bennett EL)
– adaptations in sea cucumber 122:347 (Ellington WR, Hammen CS)
– changes with increased energy demand in fish white muscle 141:425 (Driedzic WR, et al)
– oxygen conformity among lower vertebrates 142:439 (Ultsch GR, et al)
– rate during exercise in turtles 134:315 (Jackson DC, Prange HD)
– –, effect of water restriction on rock hyrax – 138:315 (Rübsamen K, Kettembeil S)
– – in winter and summer acclimatized swans 136:61 (Bech C)
Metabolism, see also energy metabolism
–, aerobic and anaerobic energy production during mollusc swimming 129:361 (Baldwin J, Lee AK)
–, cAMP stimulation of dogfish rectal gland secretion 140:209 (Shuttleworth TJ, Thompson JL)
–, anaerobic CO_2 production in goldfish 149:75 (Thillart G van den, Verbeek R)
–, anaerobic propionate acid formation in lugworm mitochondria 138:35 (Schroff G, Zebe E)

Metabolism, anaerobiosis in an isopod 129:327 (Zwaan A de, Skjoldal HR)
–, blood meal as a regulator of triacylglycerol synthesis in stable fly 147:49 (Venkatesh K, Morrison PE)
–, carbohydrate transport in an acanthocephalan 126:223 (Starling JA, Fisher FM Jr)
– of cold acclimated trout muscle 139:127 (Walesby NJ, Johnston IA)
–, compensation to reduced oxygen tensions in the sea cucumber 122:347 (Ellington WR, Hammen CS)
–, diglyceride-binding lipoprotein in locust hemolymph 136:1 (Gellissen G, Emmerich H)
– during low temperature dormancy in catfish 148:41 (Crawshaw LI, et al)
– during starvation in a snail 123:149 (Streit B)
–, effect of arginine phosphate and octopine on glycolytic enzymes in *Sepia* muscle 142:501 (Storey KB)
–, effect of crop milk feeding on pigeon – 135:97 (Vandeputte-Poma J)
–, effect of light on glycogen turnover in honeybee retina 150:69 (Evêquoz V, et al)
–, effect of temperature on – in an Antarctic mite 131:341 (Young SR)
–, effects of hypoxia in a dogfish 132:297 (Butler PJ, et al)
–, effects of training and captivity on lizard – 129:123 (Gleeson TT)
–, energetics of charr development 149:485 (Gruber K, Wieser W)
–, energetics for salamander activity 128:139 (Preslar AJ III, Hutchison VH)
–, energy assimilation, expenditure and storage in a honeyeater 137:157 (Collins BG, et al)
–, energy production in lugworm at different oxygen concentrations 149:547 (Schöttler U, et al)
–, gluconeogenesis in eel liver cells 132:343 (Hayashi S, Ooshiro Z); 135:115, 127 (Renaud JM, Moon TW)
–, glycogen phosphorylase in *Mytilus* muscle 148:27 (Ebberink RHM, Salimans M)
–, glycogen phosphorylase in silkmoth pupal fat body 131:321 (Ziegler R, et al)
–, glycolytic potential of *Helix* 126:249 (Wieser W, Wright E)
– in the koala 134:293 (Degabriele R, Dawson TJ)
–, lugworm recovery from anaerobiosis 133:227 (Pörtner H-O, et al)
–, lysine transport in shrimp intestine 124:169 (Brick RW, Ahearn GA)
– in Mongolian small mammals 145:127 (Weiner J, Górecki A)
– in neotropical marsupials 125:115 (McNab BK)
–, octopine accumulation during escape responses in *Pecten* 124:121 (Gäde G, et al)
–, oxygen consumption and energetic costs in crawling gastropods 147:113 (Houlihan DF, Innes AJ)
–, phosphagens in *Tubifex* 143:237 (Hoffmann KH)
–, physiological changes in *Mytilus* hemolymph 127:287 (Thompson RJ, et al)
–, physiological and biochemical aspects of scallop escape response 137:97 (Thompson RJ, et al), 105 (Zwaan A de, et al)
–, properties of trout liver mitochondria 143:269, 275 (Suarez RK, Hochachka PW)
–, recovery from exhaustion in salamanders 128:101 (Feder ME, Olsen LE)
–, responses of fowl to endotoxemia 134:287 (Merrill GF, et al)
–, responses of *Helix* to anoxia 141:503 (Wieser W)
–, rhythm of oxygen consumption in the bushbaby 126:241 (Perret M)
–, squid mantle muscle – 123:169 (Storey KB, Storey JM)
–, temperature dependent utilization of sorbitol in silkworm eggs 147:21 (Furusawa T, et al)
–, training effects in frogs 134:345 (Cummings JW)
–, tryptophan to nicotinamide adenine dinucleotide pathway in the mouse 128:189 (Shetta AS, et al)
–, ventilatory pauses in a crab 145:81 (Burnett LE, Bridges CR)
–, activity – of toad 144:247 (Taigen TL, Pough FH)
–, aerobic, in amphibians during activity 129:309 (Hillman SS, et al)
–, –, of a lizard 127:331 (Wood SC, et al)
–, –, thermal acclimation in a snake 130:293 (Johansen K, Lykkeboe G)
–, –, and anaerobic, during voluntary diving in seals 138:335 (Kooyman GL, et al)
–, anaerobic, amino acids in lugworm – 137:183 (Felbeck H)
–, –, of goldfish 136:45 (Thillart G van den, et al); 147:53 (Waarde A van, et al)
–, –, of *Nereis* 125:185 (Schöttler U)
–, –, of *Tubifex* 130:337 (Hoffmann KH, et al)
–, arginine –, in purinotelic animals 140:261 (Baby TG, Reddy SRR)
–, basal, effects of *Schistosoma* on snail – 135:101 (Becker W)
–, iodine –, in a snake 131:297 (Wong CC, Chiu KW)
–, iron –, in a spider 127:349 (Lee MY, et al)
–, lactate- and glycogen-, during and after exercise in lizards 147:79 (Gleeson TT)
–, low temperature –, in overwintering gall fly larva 144:183 (Storey KB, et al), 191 (Storey KB, Storey JM)
–, nitrogen –, in the rock hyrax 138:307 (Hume ID, et al)
–, octopine –, in *Sepia* 131:311 (Storey KB, Storey JM)
–, oxidative, effect on locust photoreceptor noise 142:181 (Payne R)
–, tryptophan –, during development in stick insect 137:123 (Stratakis E)
–, water- and energy –, in the rock hyrax 131:303 (Rübsamen K, et al)
– dependent transepithelial voltages across arthropod sensory epithelia 134:119 (Thurm U, Wessel G), 131 (Küppers J, Thurm U)
Metachirus, body temperature and metabolism 125:115 (McNab BK)
Metamorphosis, changing of anuran eye optical properties during – 150:329 (Sivak JG, Warburg MR)
–, effect on salamander respiration and acid-base balance 144:241 (Burggren WW, Wood SC)
– of frog calling 126:49 (Schmidt RS)
Methyl glycosides, gustatory responses of insects and gerbils to – 141:297 (Jakinovich W, et al)
Metridium, octopine dehydrogenase function in – 143:213 (Walsh PJ)
Micropterus, response of minnow to strikes by – 147:371 (Webb PW)
Microtus, metabolism and thermoregulation 145:127 (Weiner J, Górecki A)
–, short-term feeding rhythms 127:215 (Daan S, Slopsema S)
Mictyris, forward walking 136:301 (Sleinis S, Silvey GE)
Midbrain, see also inferior colliculus
–, forward masking and suppression to acoustic stimuli in treefrog – 146:435 (Hillery CM, Fay RR)
–, mating call selectivity on neurons in frog – 150:333 (Fuzessery ZM, Feng AS)
–, organization of sensory inputs to frog – 142:161 (Comer C, Grobstein P)
–, response properties of bird auditory neurones 134:241 (Coles RB, Aitkin LM)
–, auditory, frequency selectivity in frog – 146:471 (Fuzessery ZM, Feng AS)
– involvement in frog prey capture behavior 142:151 (Comer C, Grobstein P)
Middle ear, auditory structure and function of mouse – 146:517 (Saunders JC, Summers RM)
– – muscle, electrical and acoustical activation of bird – 150:61 (Oeckinghaus H, Schwartzkopff J)
– – sensitivity in anurans and reptiles 127:97 (Moffat AJM, Capranica RR)
Migration, endogenously changed directions in garden warblers 125:267 (Gwinner E, Wiltschko W)
–, orientation behavior of buntings during and after spring – 137:47 (Wiltschko W, et al)
–, likeward, of salmon fry 127:139 (Bodznik D); 137:243 (Quinn TP)
Millipedes, see *Spirostreptus*
Miniopterus, inferior collicular neuron responses 146:423 (Jen PHS, Suthers RA)
Misgurnus, electric field 141:277 (Butsuk SV, Bessonov BI)
Mißweisung, *Apis* 122:145 (Martin H, Lindauer M)
Mite, see Acari

Mitochondria, properties of trout liver – 143:269, 275 (Suarez RK, Hochachka PW)
Mole, see *Talpa*
Mollusca, abnormal axonal discharges in *Aplysia* 132:127 (Gola M, Ducreux C)
–, activity patterns in *Planorbarius* motoneurones 142:259 (Brace RC, Quicke DLJ)
–, alanopine dehydrogenase in *Littorina* foot muscle 149:57 (Plaxton WC, Storey KB)
–, anaerobic energy metabolism of *Mytilus* muscle 149:137 (Zwaan A de, et al)
–, atrial gland and egg-laying in *Aplysia* 128:67; 141:131 (Arch S, et al)
–, avoidance learning in *Pleurobranchaea* 138:157 (Davis WJ, et al)
–, axonal paroxysmal depolarisation in *Aplysia* 134:29 (Ducreux C, Gola M)
–, biting in *Aplysia* 123:31 (Susswein AJ, et al)
–, cardioactive peptides in *Helix* 138:265 (Lloyd PE)
–, chemoreception and mechanoreception in *Pleurobranchaea* 149:221, 235 (Bicker G, et al)
–, cholinergic responses of *Mercenaria* heart activated by *Conus* venom 129:61 (Elliott EJ)
–, cilia motor neurons in *Tritonia* 128:259 (Audesirk G)
–, circadian organization in *Aplysia* 131:169 (Lickey ME, Wozniak JA)
–, circadian pacemaker in *Bursatella* eye 142:403 (Block GD, Roberts MH)
–, command ability in a *Pleurobranchaea* buccal neuron 146:449, 461 (Gillette R, et al)
–, complex mechanoreceptors in *Tritonia* 141:101, 111 (Audesirk G, Audesirk T)
–, crop juice esterases in *Cepaea* 122:375; 132:327 (Oxford GS)
–, duplex system in *Limax* simple retina 133:125 (Suzuki H, et al)
–, effect of oxygen on *Lymnaea* gravity orientation 142:51 (Janse C)
–, effects of 5-hydroxytryptamine and peptides on *Helix* neuromuscular activity 139:333, 341 (Lloyd PE)
–, electrotonic coupling among *Planorbis* neurons 131:267 (Berry MS, Pentreath VW)
–, endocrinology of *Limax* maturation 133:117 (McCrone EJ, Sokolove PG)
–, energy metabolism in *Busycon* ventricle 142:457 (Ellington WR)
–, energy metabolism of *Cardium* muscle 137:177 (Gäde G)
–, energy metabolism and octopine in *Chlamys* muscle 126:269 (Grieshaber M)
–, energy production during swimming in *Limaria* 129:361 (Baldwin J, Lee AK)
–, enzymes in gastropod hepatopancreas 129:129 (Sollock RL, et al), 137 (Campbell JW, Vorhaben JE)
–, eye stabilization in *Nautilus* 132:117 (Hartline PH, et al)
–, fixed action pattern control in *Tritonia* 123:253 (Taghert PH, Willows AOD)
–, FMRfamide catch contractures of *Geukensia* and *Mytilus* muscles 148:491 (Painter SD)
–, food intake by *Ariolimax* 124:37 (Senseman DM)
–, function of *Aplysia* statocyst sensory cells 150:359 (Janse C)
–, gill control in *Aplysia* 139:17 (Dickinson PS)
–, gill control in *Pleurobranchaea* 139:11 (Dickinson PS)
–, gluconeogenesis in *Mytilus* 149:477 (Mustafa T, et al)
–, glycolytic control in *Mytilus* muscle 137:165 (Ebberink RHM, Zwaan A de)
–, glycolytic enzymes of *Sepia* 142:501 (Storey KB)
–, glycolytic potential of *Helix* 126:249 (Wieser W, Wright E)
–, hemolymph of *Mytilus* 127:287 (Thompson RJ, et al)
–, heart rate in *Aplysia* 123:11 (Dieringer N, et al)
–, higher order learning in *Limax* 144:1 (Sahley C, et al)
–, homologous neurons in opisthobranchs 131:277 (Dickinson PS)
–, immunobiological recognition system in *Helix* 141:477 (Renwrantz L, et al)
–, inhibition between feeding and withdrawal behaviors in *Pleurobranchaea* 139:77 (Kovac MP, Davis WJ)
–, light sensitivity of *Aplysia* rhinophores and eyes 136:257 (Jacklet JW)
–, *Loligo* photoreceptors 122:241 (Pinto LH, Brown JE)
–, mantle muscle metabolism in *Loligo* 123:169 (Storey KB, Storey JM)
–, mechanoreception in *Mytilus* 145:351 (Murakami A, Machemer H)
–, metabolism in *Ancylus* 123:149 (Streit B)
–, microcalorimetric studies in *Biomphalaria* 135:101 (Becker W)
–, motor program switching in *Pleurobranchaea* 145:277; 147:143 (Croll RP, Davis WJ)
–, multipolar neurons of *Lymnaea* 147:503 (Haydon PG, Winlow W)
–, Na^+- and Cl^--influxes in *Lymnaea* 148:131 (With ND de, Schors RC van der)
–, neurohormonal control of cardiac activity in *Helix* 128:269, 277 (Lloyd PE)
–, octopine accumulation during escape response in *Pecten* 124:121 (Gäde G, et al)
–, octopine metabolism in *Sepia* 131:311 (Storey KB, Storey JM)
–, olfactory orientation of *Achatina* 136:267 (Croll RP, Chase R); 143:357 (Chase R, Croll RP)
–, olfactory sensitivity of *Achatina* 148:225 (Chase R)
–, opsonizing properties of *Mytilus* hemolymph agglutinin 149:535 (Renwrantz L, Stahmer A)
–, optical properties of *Illex* eye 147:323 (Sivak G)
–, oral mechanoreceptors of *Tritonia* 130:71 (Audesirk TE), 79 (Audesirk TE, Audesirk GJ)
–, oxygen-binding of *Buccinum* hemocyanin 129:97 (Brix O, et al)
–, oxygen consumption and blood gases in hypoxic *Octopus* 148:35 (Houlihan DF, et al)
–, oxygen consumption of crawling *Monodonta* and *Gibbula* 147:113 (Houlihan DF, Innes AJ)
–, periostracin in *Mytilus* 130:301 (Waite JH, et al)
–, photo-orientation in *Lymnaea* 149:363 (Duivenboden YA van)
–, photoperiodic control of *Helix* circannual rhythms 142:89 (Bailey SFR)
–, photoperiodic control of *Limax* maturation 125:317 (Sokolove PG, McCrone EJ)
–, physiological aspects of *Placopecten* escape response 137:97 (Thompson RJ, et al), 105 (Zwaan A de, et al)
–, physiological rhythms in *Cryptozona* 125:59 (Rajarami Reddy G, et al)
–, physiology of *Mytilus* catch muscle 147:137 (Pfitzer G, Rüegg JC)
–, reproductive maturation hormone in *Limax* 143:311 (McCrone EJ, et al)
–, responses of *Helix* to anoxia 141:503 (Wieser W)
–, retinal responses in *Nautilus* 134:281 (Lange GD, et al)
–, role of bag cells in *Aplysia* egg deposition 147:523, 537 (Cobbs JS, Pinsker HM)
–, salinity effects on *Mya* neurons 144:165 (Beres LS, Pierce SK)
–, sensory systems in *Lymnaea* gravity orientation 145:311 (Janse C)
–, sodium pump in *Rapana* muscle cells 132:141 (Kobayashi M, Ando M)
–, sodium uptake by *Ligumia* gills 143:185 (Dietz TH, Graves SY)
–, strombine formation in *Mytilus* 149:557 (Zwan A de, et al)
–, time sharing of heart power in *Aplysia* 149:31 (Koch UT, Koester J)
–, volatile fatty acids in *Mytilus* 123:163 (Kluytmans JH, et al)
–, volume regulation by *Neotia* red blood cells 138:283, 291, 299 (Amende LM, Pierce SK)
Molossus, auditory neurophysiology of inferior colliculus 131:137 (Vater M, et al), 147 (Vater M, Schlegel P)
Molt cycle, ammonia excretion in sandshrimps during – 133:199 (Regnault M)
Molting in the tarantula 149:121 (Stewart DM, Martin AW)
– hormones, cytoplasmic receptors for – in crayfish 128:95 (Kuppert P, et al)
Moniliformis, carbohydrate transport 126:223 (Starling JA, Fisher FM Jr)
Monkey, potassium relaxation of smooth muscle 135:357 (Webb RC, Bohr DF)

Monodelphis, body temperature and metabolism 125:115 (McNab BK)
Monodonta, oxygen consumption during crawling 147:113 (Houlihan DF, Innes AJ)
Monopolar neurons, spectral sensitivity in the fly 123:335 (Moring J)
Morelia, ventilation and gas exchange 122:403 (Donelly P, Woolcock AJ)
Mormyrus, behavioral responses to complex impedances 145:459 (Meyer JH)
Morphine, effect on shrimp defensive response 147:455 (Maldonado H, Miralto A)
Mosquito, see *Aedes, Culex*
Moths, see also Lepidoptera
–, effect of hearing on bat echolocation 132:77 (Fenton MB, Fullard JH)
–, sympatric, tympanate, detection of African insectivorous bats by – 143:363 (Fullard JH, Thomas DW)
Motoneuron, variability of responses to sensory stimulation in locust 134:55 (Kien J)
– interactions in crayfish claw control 124:237 (Wiens TJ, Atwood HL)
– pattern formation in crayfish 141:183 (Kirk MD, Glantz RM)
– synaptic potentials during turtle scratch reflex 146:401 (Stein PSG, et al)
Motoneurons, activity during locust flight 146:311 (Robertson RM, Pearson KG)
–, coactivation of locust antagonistic – 144:391 (Pearson KG, Robertson RM)
– in the cockroach leg excited by giant interneurons 125:305 (Ritzmann RE, Camhi JM)
–, convergence of proprioceptive influences on locust coxal – 150:77 (Hustert R)
–, firing sequences in fly – 123:271 (Harcombe ES, Wyman RJ)
–, innervating dorsal superficial muscles of *Pagurus* 121:413 (Chapple WD)
–, involved in crayfish escape behavior 121:173 (Wine JJ)
– in locust neck muscles 140:321 (Kien J)
–, proprioceptive gating of inhibitory pathways in locust hindleg flexor – 146:507 (Steeves JD, Pearson KG)
–, repetitive activation of crab antennular – 142:189 (Snow PJ)
– in a scorpion walking leg 140:31 (Bowerman RF, Burrows M)
–, central, exciting *Tritonia* cilia 128:259 (Audesirk G)
–, flexor, command fiber activation of – in lobster abdomen 148:515 (Thompson CS, Page CH)
–, flight –, in *Drosophila* 150:295, 305 (Koenig JH, Ikeda K)
–, –, inhibition between fly – 144:345 (Tanouye MA, Wyman RJ)
–, radular retractor –, activity patterns in snail – 142:259 (Brace RC, Quicke DLJ)
–, spinal, thermal effects on pigeon and leguan – 139:251 (Görke K)
–, ventilatory, rhythmic burst generation in crab – 150:1 (Simmers AJ, Bush BMH)
Motor activation of non-impulsive muscle receptor in crabs 142:113 (Cannone AJ, Bush BMH)
– activity, effects of photoperiods on daily patterns of – in the rat 124:1 (Borbély AA, Neuhaus HU)
– axon, peripheral spike generation and modulation in crab – 142:309 (Stephens PJ, Atwood HL)
– control in crayfish escape behavior 142:281 (Reichert H, et al)
– – of lobster antennal reflexes 147:269 (Barnes WJP, Neil DM)
– – by plurisegmental interneurons in locusts 140:303 (Kien J)
– flexibility of the locust 134:55 (Kien J)
– neuron, see motoneuron
– pattern, pharmacological effects on lobster – 139:1 (Young RE, et al)
– – generation in a crab ganglion 130:221, 229 (Hermann A)
– – generator, oscillatory input to lobster – 143:453 (Robertson RM, Moulins M)
– patterns, rhythmic, in *Limulus* 141:67, 77 (Watson III WH), 87 (Wyse GA, et al)
– program switching in a gastropod mollusc 145:277; 147:143 (Croll RP, Davis WJ)
– responses to paired stimulation of cockroach giant interneurons 143:61 (Ritzmann RE, Pollack AJ), 71 (Ritzmann RE)
Moult, see molt
Mouse, see also *Acomys, Peromyscus*
–, activity in cold 123:91 (Barnett SA, et al)
–, activity rhythms in a genetically anophthalmic strain 149:333 (Scheuch GC, et al)
–, auditory structure and function in middle ear 146:517 (Saunders JC, Summers RM)
–, blood count cycle 149:307 (Bennett MF, Pomeroy GC)
–, circadian rhythm variants 148:137 (Peleg L, et al)
–, cochlear structure and function 122:65 (Ehret G, Frankenreiter M)
–, development of circadian pacemaker 143:527 (Davis FC, Menaker M)
–, evaporative water loss 128:177 (Edwards RM, Haines H)
–, genetic analysis of circadian rhythms 139:121 (Possidente B, Hegmann JP)
–, hemoglobin-oxygen affinity in embryonic erythroid cells 129:333 (Wells RMG)
–, neurons in the inferior colliculus 127:175 (Willott JF, Urban GP)
–, thermoregulation 123:185 (Lacy RC, et al)
–, tryptophan metabolism 124:189 (Shetty AS, et al)
–, ultrasound recognition 148:245 (Ehret G, Haack B)
Movement, see also locomotion, motor
–, effect on alligator blood flow 148:57 (Weinheimer CJ, et al)
– detecting interneurons of dragonfly 142:27 (Olberg RM)
– – pathway, processing of visual information in fly – 140:1 (Srinivasan MV, Dvorak DR)
– detection in jumping spider eyes 124:15 (Duelli P)
– –, visual, in fly 134:45 (Pick B, Buchner E)
– detector neuron, transmission at an electrical synapse in locusts 137:233 (Rowell CHF, O'Shea M)
– detectors in dragonfly ventral nerve cord 141:327 (Olberg RM)
– –, horizontal, in bee optic centers 147:155 (DeVoe RD, et al)
– learning of flying bees 146:273 (Erber J)
– pattern, key stimulus of toad prey 128:189 (Borchers H-W, et al)
– sensitive cells in fly medulla 138:93 (DeVoe RD)
– – neuron in fly third optic ganglion 135:29 (Eckert H); 141:123 (Eriksson ES)
– – – in *Notonecta* optic lobe 123:315 (Schwind R)
Mud puppy, see *Necturus*
Mugil, calcium and ionic transport in gill 141:511 (Pic P, Maetz J)
–, cytochalasin and ionic excretion in gill 141:523 (Pic P, Lahitte P)
–, Na and Cl excretion by the gills 123:155 (Pic P)
Multiple jamming, responses of *Eigenmannia* to – 136:153 (Partridge BL, Heiligenberg W)
Mus, see mouse
Musca, chromatic aberration of corneal lens 146:493 (McIntyre P, Kirschfeld K)
–, gustatory responses to methyl glycosides 141:297 (Jakinovich W, et al)
–, neuromuscular transmission in larval muscles 135:291, 299 (Irving SN, Miller TA)
–, non-linearity and light adaptation in photoreceptor 144:53 (Dubs A)
–, photostable pigment in R7 125:275 (Kirschfeld K, et al); 143:3 (McIntyre P, Kirschfeld K)
–, sex-specific photoreceptors 145:139 (Hardie RC, et al)
–, spatial integration in compound eye 146:321 (Dubs A)
–, spectral effects of pupil 146:145 (Vogt K, et al)
–, spectral sensitivity of photoreceptors 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al); 134:95 (Bernard GD, Stavenga DG)
–, twisted rhabdomeres 142:43 (Smola U, Wunderer H)
–, visual movement detection 134:45 (Pick B, Buchner E)
Muscle, antennular, responses of crab – to repetitive activation of specific motoneurons 142:189 (Snow PJ)
– development, role in thermoregulation development in swallows 149:99 (Marsh RL, Wickler SJ)
– fibers in abdominal dorsal superficial muscles of *Pagurus* 121:395 (Chapple WD)

Muscle fibers, growth of crustacean – 124:277 (Bittner GD, Traut DL)
– –, volume regulation of crab – in vitro 128:153 (Leader JP, Bedford JJ)
Muscle physiology, action potentials and contraction in siphonophore myoepithelium 144:555 (Bone Q)
– –, action potential and contraction of hydromedusan subumbrellar swimming muscle 144:401 (Spencer AN, Satterlie RA)
– –, anaerobic energy metabolism of sea mussel adductor muscle 149:137 (Zwaan A de, et al)
– –, buffering capacity and anaerobic potential of vertebrate muscle 143:191 (Castellini MA, Somero GN)
– –, calcium movements in rat ileal smooth muscle 126:233 (Huddart H, Saad KHM)
– –, catabolic enzymes in premigratory catbird pectoralis muscle 141:417 (Marsh RL)
– –, coelenterate neuromuscular synapse 148:353 (Spencer AN)
– –, contractile properties of carp M. hyohyoideus white- and red-fibre type 149:441 (Granzier HLM, et al)
– –, contractions of holothurian muscles 136:103 (Prosser CL, Mackie GO)
– –, control of glycolysis in sea mussel 137:165 (Ebberink RHM, Zwaan A de)
– –, crayfish neuromuscular junctions 121:223 (Zucker RS, Bruner J)
– –, development of phosphorylase activity in chick pectoralis 141:439 (Wittenberger C, Coprean D)
– –, dual reflex motor control of nonspiking crab muscle receptor 148:365 (Cannone A, Bush BMH)
– –, effect of temperature on crab motor axon activity 142:309 (Stephens PJ, Atwood HL)
– –, effects of anoxia or uncouplers of oxidative phosphorylation on crayfish slow muscle fibers 125:327 (Moody W Jr)
– –, effects of 5-hydroxy-tryptamine and endogenous peptides on snail neuromuscular activity 139:333, 341 (Lloyd PE)
– –, effects of L-glutamate application on insect muscle resistance 148:281 (Robinson NL)
– –, electrogenic sodium pump in molluscan radular muscle cells 132:141 (Kobayashi M, Ando M)
– –, energy metabolism of jumping cockle foot muscle 137:177 (Gäde G)
– –, energy metabolism of rat skeletal muscle 142:465 (Nicol CJM, Johnston IA)
– –, energy metabolism in squid mantle 123:169 (Storey KB, Storey JM)
– –, excitation, inhibition and modulation in leech longitudinal muscle 146:527 (Mason A, Kristan WB Jr)
– –, exercise training in fish fast and slow muscles 135:147 (Johnston IA, Moon TW)
– –, eye muscles in the crayfish 121:349 (Mellon DeF Jr), 367 (Mellon DeF Jr, Lorton ED)
– –, 'fast' and 'slow' neuromuscular transmission in larval insect muscles 135:291 (Irving SN, Miller TA) 299
– –, FMRfamide catch contractures of molluscan smooth muscle 148:491 (Painter SD)
– –, ganglionic activation of lobster myocardium 139:67 (Kuramoto T, Kuwasawa K)
– –, glycogen phosphorylase activity in sea mussel posterior adductor muscle 148:27 (Ebberink RHM, Salimans M)
– –, growth of crustacean muscles and muscle fibers 124:277 (Bittner GD, Traut DL)
– –, hermit crab dorsal superficial muscles 121:395 (Chapple WD)
– –, interactive effects of temperature and pH on toad sartorius muscle contraction 145:67 (Renaud JM, Stevens ED)
– –, long term facilitation of tension in crayfish muscles 144:335 (Jacobs JR, Atwood HL)
– –, metabolic changes with increased energy demand in fish white muscle 141:425 (Driedzic WR, et al)
– –, morphology and synaptology of regenerating shrimp muscle 134:17 (Stephens PJ, Mellon DeF Jr)
– –, motor neurons in crab dorsal superficial muscles 121:413 (Chapple WD)
– –, motor organization of shrimp claw muscles 132:109 (Mellon DeF, Stephens PJ)
– –, muscle fiber water in marine crustaceans 146:113 (Freel RW)
– –, neural control of cord shortening in the leech 124:339 (Magni F, Pellegrino M)
– –, neuromuscular transmission in leech longitudinal muscle 124:333 (Kuffler DP)
– –, octopine in scallop adductor muscle during swimming and recovery 126:269 (Grieshaber M)
– –, oxygen consumption by rodent skeletal muscles 128:185 (Grubb B, Folk GE Jr)
– –, peripheral innervation of cod fast myotomal fibres 143:123 (Altringham JD, Johnston IA)
– –, potassium induced relaxation of vascular smooth muscle 135:357 (Webb RC, Bohr DF)
– –, properties of skeletal muscles in brown and domesticated rat 126:263 (Melichna J, et al)
– –, quantal nature of neuromuscular transmission in crayfish 136:89 (Brown TH, Newby NA)
– –, reflexes and lyriform slit sense organ in spider leg 125:45 (Seyfarth E-A)
– –, regulation and mechanics in mussel catch muscle 147:137 (Pfitzer G, Rüegg JC)
– –, sensitivity of lobster foregut muscles to acetylcholine and glutamate 138:187 (Lingle C)
– –, structure and synapses in transformed shrimp muscle 132:97 (Stephens PJ, Mellon DeF)
– –, synaptic and regenerative responses in crab cardiac muscle fibres 143:349 (Benson JA)
– –, temperature acclimation and adenine nucleotides in trout muscle 139:127 (Walesby NJ, Johnston IA)
– –, temperature acclimation in goldfish muscle 124:111 (Johnston I, Lucking M)
– –, thermal dependence of isometric contractile properties of lizard muscle 147:11 (Putnam RW, Bennett AF)
– –, thermal limits of neuromuscular function in an Antarctic fish 147:237 (Macdonald JA, Montgomery JC)
Muscle receptor, dual reflex motor control of crab – 148:365 (Cannone A, Bush BMH)
– –, non-impulsive, in crabs 142:103, 113 (Cannone AJ, Bush BMH)
– – organs, role in crayfish escape behavior 121:187 (Wine JJ)
– reflexes in bat middle ear and larynx 124:61 (Jen PH-S, et al)
– – and lyriform slit sense organ in a spider leg 125:45 (Seyfarth E-A)
– stimulation during locust flight 128:57 (Möhl B, Nachtigall W)
– tension receptor in locust leg 131:247 (Theophilidis G, Burns MD)
Muscles, eye –, of *Procambarus* 121:349 (Mellon DeF Jr)
–, skeletal, in hibernating hamster 122:385 (Vyskocil F, Gutmann E)
–, tergo-coxal retractor, innervation in stick insect – 143:81 (Graham D, Wendler G)
Mussel, see *Mytilus*
Mustelus, acoustic evoked activity in the brain 129:223 (Bullock TH, Corwin JT)
Mutant, temperature-sensitive paralytic, of *Drosophila* 144:409 (Benshalom G, Dagan D)
Mutants, anophthalmic, in mice, activity rhythms 149:333 (Scheuch GC, et al)
–, chemotactic behavior of nematode – 137:93 (Dusenbery DB)
–, neurotransmitter –, of *Drosophila* 137:83 (Greenspan RJ)
Mya, salinity effects on neurons 144:165 (Beres LS, Pierce SK)
Mygalopsis, auditory function 142:169 (Hill KG, Oldfield BP)
Myocardium, ganglionic activation of lobster – 139:67 (Kuramoto T, Kuwasawa K)
–, inotropic effects of adrenaline on fish – 147:123 (Gesser H, et al)
–, role of Ca under acidosis of – 127:307 (Gesser H, Poupa O)
Myoepithelium, action potentials and contraction of *Chelophyes* – 144:555 (Bone Q)
Myoglobin content in red and white fish hearts 149:67 (Driedzic WR, Stewart JM)
Myoid epithelium, electrophysiology of siphonophore – 143:329 (Chain BM, et al)
Myotis, acoustic behavior in the field 142:67 (Miller LA, Degn HJ)

Myotis, auditory neurons in the superior olivary complex 128:47 (Jen PH-S)
–, middle ear and laryngeal muscle reflexes 124:61 (Jen PH-S, et al)
–, ultrasonic cries 134:165 (Mogensen F, Møhl B)
Myotomal muscle fibres, fast, innervation in cod – 143:123 (Altringham JD, Johnston IA)
Myoxocephalus, electric field 141:277 (Butsuk SV, Bessonov BI)
–, epinephrine effects in isolated head 138:79 (Claiborne JB, Evans DH)
Myripristis, auditory sensitivity 132:203 (Coombs S, Popper AN)
Myrmecia, visually mediated snapping 121:33 (Via SE)
Mytilus, anaerobic energy metabolism of adductor muscle 149:137 (Zwaan A de, et al)
–, FMRfamide catch contractures of smooth muscle 148:491 (Painter SD)
–, gluconeogenesis 149:477 (Mustafa T, et al)
–, glycogen phosphorylase in posterior adductor muscle 148:27 (Ebberink RHM, Salimans M)
–, glycolysis in posterior adductor muscle 137:165 (Ebberink RHM, Zwaan A de)
–, hemolymph properties 127:287 (Thompson RJ, et al)
–, mechanoreception in lateral ciliated cells 145:351 (Murakami A, Machemer H)
–, opsonizing properties of an isolated hemolymph agglutinin 149:535 (Renwrantz L, Stahmer A)
–, periostracin 130:301 (Waite JH, et al)
–, physiology of catch muscle 147:137 (Pfitzer G, Rüegg JC)
–, strombine formation and muscle energy metabolism 149:557 (Zwaan A de, et al)
–, volatile fatty acids 123:163 (Kluytmans JH, et al)

N

N-acetyltransferase in chick retina 139:103; 140:181 (Binkley S, et al)
–, pacemaker driving circadian rhythm in rat pineal gland 145:539 (Illnerová H, Vaněček J)
Na, see also sodium
– excretion, stress effect on fish gills 123:155 (Pic P)
– -independent uptake of nutrients in *Tetrahymena* 125:97 (Rasmussen L, et al)
–, role in respiration and water transport regulation of cockroach rectum 138:347 (Tolman JH, Steele JE), 357 (Steele JE, Tolman JH)
– secretion in mosquito Malpighian tubules 149:511 (Williams JC Jr, Beyenbach KW)
– -transport, seasonal variation in tortoise intestine 129:355 (Gilles-Baillien M, et al)
Na-ATPase activity in trout gills 124:97 (Pfeiler E)
NaCl absorption in tilapia intestine 146:1 (Mainoya JR)
– balance of *Callinectes* in fresh water 123:127 (Cameron JN)
–, responses of turnip beetle larval galeal cells to – 144:495 (Mitchell BK, Gregory P)
Na^+K^+ATPase activity in flounder gills 147:93 (Stagg RM, Shuttleworth TJ)
– activity in trout gills 124:97 (Pfeiler E)
Na/NH_4 exchange in perfused trout gill 124:181 (Payan P)
NAD/NADH ratios in goldfish muscle and liver, effects of anoxia on – 146:41 (Thillart G van den, et al)
NADH, interspecific variation in K_m of – for M_4-LDH 137:115 (Greaney GS, Somero GN)
Naloxone, effect on shrimp defensive response 147:455 (Maldonado H, Miralto A)
Nasonia, photoperiodic induction of diapause 127:197 (Saunders DS)
Natrix, hypoxic and hypercapnic responses 129:105 (Gratz RK)
–, metabolic adaptation 142:489 (Davies PMC, Bennett EL)
–, ventilation and gas exchange 127:299 (Gratz RK)
Nautilus, eye stabilization 132:117 (Hartline PH, et al)
–, retinal responses 134:281 (Lange GD, et al)
Navodon, neural temperature compensation 142:411 (Macdonald JA)
Navigation, see also homing, orientation
–, effects of wind direction at home loft on pigeon – 128:285 (Ioalè P, et al), 297 (Waldvogel JA, et al)
Necturus, glossopharyngeal taste system 143:143, 151 (Samanen DW, Bernard RA)
Negaprion, acoustic evoked activity in the brain 129:223 (Bullock TH, Corwin JT)
–, arterial blood oxygen during exercise 147:41 (Bushnell PG, et al)
–, peripheral auditory physiology 142:379 (Corwin JT)
Nemathelminthes, carbohydrate transport in *Moniliformis* 126:223 (Starling JA, Fisher FM Jr)
–, gluconeogenesis in *Ascaris* 149:477 (Mustafa T, et al)
Nematobrachion, optics of the eye 130:49 (Land MF, et al)
Nematoda, chemotaxis of *Caenorhabditis* mutants 137:93 (Dusenbery DB), 353 (Dusenbery DB, Barr J)
–, phototaxis in *Oncholaimus* and *Enoplus* 134:85 (Burr AH)
–, responses of *Caenorhabditis* to chemical stimulation 136:327, 333 (Dusenbery DB)
Nematoscelis, eye movements and vertical steering 137:255 (Land MF)
–, optics of eyes 130:49 (Land MF, et al)
Neostriatum, auditory, functional organisation in Guinea fowl 132:243 (Bonke D, et al), 257 (Scheich H, et al)
Nephila, web vibrations and prey captures 148:445 (Klärner D, Barth FG)
Nereis, anaerobic metabolism 125:185 (Schöttler U)
–, ventilation and oxygen uptake 145:45 (Kristensen E)
Nerve, laryngeal, activity during pulse emission in a bat 143:317 (Schuller G, Rübsamen R), 323 (Rübsamen R, Schuller G)
–, myelinated, Ca distribution and transport in frog – 141:319 (Diecke FPJ, Stout MA)
– cord, abdominal, vascularization of crayfish – 143:93 (Brown SK, Sherwood DN)
– – shortening, neural control in the leech 124:339 (Magni F, Pellegrino M)
Nervous control, autonomic, of cod iris 138:149 (Nilsson S)
– system, calcium depletion depolarizations in leech Retzius cell membrane 150:499 (Yang J, Lent CM)
– – of a glossiphoniid leech 144:435 (Kramer AP, Goldman JR), 449 (Kramer AP)
– –, neurons in crayfish thoracic ganglia 121:145 (Wine JJ, Hagiwara G)
– –, autonomic, control of mole rat heart rate by – 142:533 (Storier D, et al)
– –, central, see central nervous system
– –, peripheral, temperature compensation in poikilotherms 142:411 (Macdonald JA)
– –, segmental, properties of Leydig cells in leech – 146:379 (Keyser KT, et al)
Neural, see also neuronal
– changes in rats by exposure to an odor 124:259 (Laing DG, Panhuber H)
– control of cord shortening in the leech 124:339 (Magni F, Pellegrino M)
– – of hatching movements in chicken 145:497 (Bekoff A, Kauer JA)
– coordination of locust ventilatory system 137:305 (Pearson KG)
– correlates of cockroach sound production 132:27 (Nelson MC)
– – of Jamming Avoidance Response in *Eigenmannia* 136:135 (Bastian J, Heiligenberg W)
– – of *Tritonia* behavioral change 141:111 (Audesirk G, Audesirk T)
– gill control in nudibranchs 139:11, 17 (Dickinson PS)
– mechanisms underlying reversal of crayfish uropod steering movement 145:471 (Yoshino M, et al)
– pattern generator, effect of picrotoxin on lobster – 139:1 (Young RE, et al)
– pathways, alternative, initiate fast start responses in Mauthner cell lesioned goldfish 145:485 (Eaton RC, et al)
Neurogenetics, topography of courtship song in *Drosophila* sex mosaics 129:85 (Schilcher F von, Hall JC)
Neurohormonal control of *Helix* cardiac activity 128:269, 277 (Lloyd PE)

Neurohormone, hyperglycemic, from crayfish sinus gland 141:445 (Keller R)
Neuromuscular activity, effects of 5-hydroxytryptamine and peptides on snail – 139:333, 341 (Lloyd PE)
– basis of *Drosophila* courtship song 130:87 (Ewing AW)
– facilitation, effect of thermal history on – in crayfish claw 143:53 (Jacobs JR, Atwood HL)
– function, thermal limits in an Antarctic fish 147:237 (Macdonald JA, Montgomery JC)
– junctions, fast and slow, transmitter at fly – 144:139 (Robinson NL)
– –, synaptic depression in crayfish – 121:223 (Zucker RS, Bruner J)
– strategies in movements of a crustacean leg joint 128:81 (Ayers J, Clarac F)
– synapse in a medusa 148:353 (Spencer AN)
– transmission in leech longitudinal muscle 124:333 (Kuffler DP)
– –, 'fast' and 'slow', in fly larvae 135:291, 299 (Irving SN, Miller TA)
– –, quantal nature in crayfish abdominal flexors 136:89 (Brown TH, Newby NA)
Neuron, auditory, two-tone suppression of cricket – 144:117 (Boyan GS)
–, buccal, substrates for command ability in slug – 146:449, 461 (Gillette R, et al)
–, dopamine-containing, and postsynaptic coupling in *Planorbis* 131:267 (Berry MS, Pentreath VW)
–, inhibitory, in crab walking legs 143:111 (Ballantyne D, Rathmayer W)
–, omega, interaction of vibrational and acoustic stimuli on cricket – 143:135 (Wiese K)
–, paroxysmal depolarization of an *Aplysia* – 134:29 (Ducreux C, Gola M)
–, R_2, of *Aplysia*, abnormal axonal discharges 132:127 (Gola M, Ducreux C)
–, sensory, dendritic impulse initiation in an epithelial – 142:237 (Erler G, Thurm U)
–, visual, in fly third optic ganglion 135:29 (Eckert H)
Neuronal, see also neural
– control of heartbeat coordination in *Hirudo* 122:111 (Calabrese RL)
– – of lobster locomotion 123:289 (Ayers JL Jr, Davis WJ)
– – of locomotion in hydrozoan medusae 150:195 (Satterlie RA, Spencer AN)
– excitation, inhibition and modulation in leech muscle 146:527 (Mason A, Kristan WB Jr)
– networks, electrotonic coupling in crayfish brain – 140:121 (Glantz RM, Kirk MD)
Neurons, effects of salinity stress on electrophysiological properties of bivalve – 144:165 (Beres LS, Pierce SK)
– in leech nervous system 144:435 (Kramer AP, Goldman JR)
–, bursting, ionic requirements for activity in lobster ganglion 145:191 (Gola M, Selverston A)
–, color opponent, of honeybees 142:81 (Riehle A)
–, direction-specific, in frog pretectum 140:53 (Katte O, Hoffmann K-P)
–, homologous, in nudibranch molluscs 131:277 (Dickinson PS)
–, large, in locust neck connectives 147:379 (Williamson R, Burns MD)
–, mesencephalic trigeminal, signal processing in carp – 141:157 (Jüch PJW)
–, multipolar, of a pond-snail 147:503 (Haydon PG, Winlow W)
–, prey-selective, in toad optic tectum 144:429 (Weerasuriya A, Ewert J-P)
–, second order, in cockroach ocelli 149:215 (Mizunami M, et al)
–, – –, connexions to receptors in dragonfly ocelli 149:389 (Simmons PJ)
–, – –, in fly visual system 126:297 (Zimmerman RP)
–, sustained, in cricket medulla 125:259; 136:191 (Honegger H-W)
Neuropeptide, effects of FMRfamide on molluscan muscle contraction 148:491 (Painter SD)
Neuropharmacology of *Hydra* pacemakers and conductive tissues 128:71 (Kass-Simon G, Passano LM)
Neuroptera, see antlion, *Chrysopa, Corydalus*
Neurosecretory cell, action potentials of silkworm – 140:43 (Miyazaki S)
– hormones of crustacean sinus glands 122:359 (Keller R)
– material release in bee brain in relation to feeding periods 126:327 (Heinzeller T, Vogel H)
– polypeptides in crustacean eyestalks 134:303 (Andrew RD, Saleuddin ASM)
Neurotransmitter mutants of *Drosophila* 137:83 (Greenspan RJ)
–, resistance changes following L-glutamate application in insect muscle 148:281 (Robinson NL)
Newt, see *Notophthalmus, Triturus*
Nezara, vibratory interneurons 139:87 (Čokl A, Amon T)
–, vibroreceptors in the legs 150:261 (Čokl A)
Nictitating membrane, refractive significance in bird eyes 125:335 (Sivak JG, et al)
Nitrogen catabolism in starving and water deprived ground squirrels 149:565 (Bintz GL, Strand CE)
– metabolism in the rock hyrax 138:307 (Hume ID, et al)
Nociceptors in dogfish gills 130:1 (Poole CA, Satchell GH)
Noctiluca, action potential and bioluminescence 134:137 (Nawata T, Sibaoka T)
Noemacheilus, melanophore potentials 131:13 (Collis CS)
Noetia, volume regulation by red blood cells 138:283, 291, 299 (Amende LM, Pierce SK)
Norepinephrine turnover in cold exposed redpolls 146:137 (Koban M, Feist DD)
Normoxic water, heart rate and respiration of crayfish submerged to – 138:67 (Taylor EW, Wheatly MG)
Nothoprocta, microspectrophotometry of photoreceptors 144:271 (Sillman AJ, et al)
Notiosorex, hypothermia 137:173 (Lindstedt SL)
Notonecta, geometrical optics of the eye 140:59 (Schwind R)
–, movement-sensitive neuron in the optic lobe 123:315 (Schwind R)
–, polarization-sensitive response to UV light 150:87 (Schwind R)
Notophthalmus, distribution of leucocytes 125:205 (Bennett MF, Reap LE)
Nucleus angularis, single cell responses to tones in blackbirds 126:347 (Sachs MB, Sinnott JM)
– magnocellularis, single cell responses to tones in blackbirds 126:347 (Sachs MB, Sinnott JM)
– praeeminentialis, electro- and mechanoreceptive center in catfish brainstem 145:299 (Tong SL)
Nudibranchs, neural gill control 139:11, 17 (Dickinson PS)
Numida, responses in auditory neostriatum 132:243 (Bonke D, et al), 257 (Scheich H, et al)
Nutrient uptake in *Tetrahymena* 125:97 (Rasmussen L, et al)
Nyctalus, acoustic behavior in the field 142:67 (Miller LA, Degn FJ)
Nyctiphanes, optics of the eye 130:49 (Land MF, et al)

O

Ocellar component of dragonfly flight equilibrium control 141:335 (Stange G)
– interneurons, potentials in bee – 143:427 (Milde J)
– neurons, large second order, in cockroach 149:215 (Mizunami M, et al)
– –, spectral sensitivity and reverse Purkinje shift in dragonfly – 144:91 (Mobbs PG, et al)
– –, synaptic transmission by locust – 145:265 147:401 (Simmons PJ)
Ocelli, cellular patterns and spectral sensitivity of *Papilio* larval – 139:41 (Ichikawa T, Tateda H)
–, connexions between receptors and second-order neurons in dragonfly – 149:389 (Simmons PJ)
–, electrophysiology of *Drosophila* – 126:15 (Hu KG, et al)
–, functional characteristics of ant photoreceptors 137:63 (Mote MI, Wehner R)
–, functional organisation in locusts 124:297 (Wilson M)
–, pigment migration in dragonfly – 129:199 (Stavenga DG, et al)
–, role in fly phototaxis 135:85 (Hu KG, Stark WS)

Ocellus, discrete hyperpolarizing potentials in locust and dragonfly – 128:347 (Wilson M)
–, graded potentials in locust – 124:317 (Wilson M)
–, intracellular responses of cells in dragonfly median – 139:25 (Patterson JA, Chappell RL)
–, lateral, efferent system of dragonfly – 125:341 (Kondo H)
–, median, spectral sensitivity of bumblebee – 139:261 (Meyer-Rochow VB)
Ochotona, metabolism and thermoregulation 145:127 (Weiner J, Górecki A)
Octopine, breakdown and formation in scallop muscle 126:269 (Grieshaber M)
–, effect on *Sepia* glycolytic enzymes 142:501 (Storey KB)
–, levels during escape responses in *Pecten* tissues 124:121 (Gäde G, et al)
– dehydrogenase function in a sea anemone 143:213 (Walsh PJ)
– metabolism in *Sepia* 131:311 (Storey KB, Storey JM)
Octopus, oxygen consumption and blood gases in hypoxia 148:35 (Houlihan DF, et al)
Ocular responses to unilateral illumination in goldfish 150:473 (Graf W, Meyer DL)
Oculomotor behavior in fishes 128:241 (Graf W, Meyer DL)
– reflex in *Nautilus* 132:117 (Hartline PH, et al)
– system, reflex actions in *Procambarus* 121:367 (Mellon DeF Jr, Lorton ED)
Ocypode, rhabdom membrane turnover 131:205 (Nässel DR, Waterman TH)
Odonata, see *Aeschna, Anax, Cordulegaster, Hemianax, Hemicordulia, Orethrum, Pachydiplax, Pantala, Sympetrum*
Oecanthus, energetics of singing 143:199 (Prestwich KN, Walker TJ)
–, stridulation and tegminal resonance 129:269 (Sismondo F)
Oil globules in retina of palaeognathous birds 144:271 (Sillman AJ, et al)
Olfaction, effect on pigeon homing 135:227 (Papi F, et al); 139:209 (Wallraff HG); 143:411 (Wallraff HG); 150:493 (Meschini E)
–, neural and behavioral changes in rats by exposure to an odor 124:259 (Laing DG, Panhuber H)
–, responses to amino acids and derivatives in catfish 123:357 (Caprio J)
–, responses of tick sensilla to tick related odours 148:411 (Waladde SM)
Olfactory bulb units of sokeye salmon 127:147 (Bodznik D)
– cell responses to female sex pheromones in moth 121:205 (Otter CJ Den)
– excitation of lobster brain interneurons 150:129 (Hamilton KA, Ache BW)
– -induced neural activity in crayfish 140:295 (Ache BW, Sandeman DC)
– learning in a *Drosophila* mutant 130:271 (Dudai Y)
– orientation in a snail 136:267 (Croll RP, Chase R); 143:357 (Chase R, Croll RP)
– pathway, electrophysiology of pigeon – 137:39 (Madacar AW, et al)
– receptor cell responses in *Ips* 121:343 (Mustaparta H, et al)
– receptors on cockroach antenna 128:227 (Sass); 144:509 (Selzer R)
– sensitivity of a snail 148:225 (Chase R)
– stimuli, role of biogenic amines on bee responses to – 145:363 (Mercer AR, Menzel R)
– system, peripheral, responses from eel – 148:379 (Silver WL)
Ommatidial array in bee eyes 143:17 (Seidl R, Kaiser W)
Ommochrome synthesis, regulation by juvenile hormone in tobacco hornworm 147:1 (Hori M, Riddiford LM)
Ommochromes, effect of blinding on content in stick insect epidermis 130:331 (Bückmann D)
Omocestus, femoral chordotonal organ and leg movements 134:173 (Bässler U)
–, tooth impact rate in the song 124:27 (Skovmand O, Pedersen SB)
Oncholaimus, phototaxis 134:85 (Burr AH)
Oncopeltus, thermal hysteresis producing protein 142:539 (Patterson JL, et al)
Oncorhynchus, calcium as odorant for natural water discrimination 127:157 (Bodznik D)
–, compass orientation 137:243 (Quinn TP); 147:547 (Quinn TP, Brannon EL)
–, electric field 141:277 (Butsuk SV, Bessonov BI)
–, olfactory bulb units 127:147 (Boznik D)
–, prolactin regulation 140:217 (Brewer KJ, McKeown BA)
–, water source preference and lakeward migration 127:139 (Bodznick D)
ON-type visual interneurons in cockroach optic lobe, properties of – 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
Opercular membrane, chloride secretion by fish – 145:29 (Mendelsohn SA, et al); 146:27 (Foskett JK, et al)
Ophiodon, flow patterns in isolated perfused gill 133:233 (Farrell AP, et al)
Opiate effects on mantis shrimp defensive response 147:455 (Maldonado H, Miralto A)
Opisthobranchs, homologous neurons controlling gill movements 131:277 (Dickinson PS)
Opsanus, chloride dependent osmoregulation of erythrocytes 146:9 (Lauf PK)
–, isolated, perfused head 149:107 (Oduleye SO, et al), 115 (Oduleye So, Evans DH)
–, oxygen consumption 142:439 (Ultsch GR, et al)
Optic fibers, nonspiking, slow potentials in *Limulus* – 141:239 (Behrens ME, Fahy JL)
– lobe, horizontal cells in fly – 143:511 (Eckert H)
– –, movement-sensitive interneurons in fly – 141:123 (Eriksson ES)
– –, movement-sensitive neuron in *Notonecta* – 123:315 (Schwind R)
– –, ON-type visual interneurons in cockroach – 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
– –, sustaining fibers in crayfish – 146:175; 150:419 (Kirk MD, et al)
– tectum, functional relations with torus longitudinalis in teleostean fish 150:39 (Northmore DPM, et al)
– –, integration of sensory information in electric fish – 147:287 (Bastian J)
– –, prey-selective neurons in toad's – 144:429 (Weerasuriya A, Ewert J-P)
– –, responses to moving stimuli in goldfish 128:13 (Riemslag FCC, Schellart NAM)
Optical characteristics of flounder eye 146:345 (Sivak JG)
– geometry of euphausiid eyes 130.49 (Land MF, et al)
– physiology, intracellular, of insect eyes 134:95 (Bernard GD, Stavenga DG); 137:193 (Bernard GD, Wehner R), 205 (Wehner R, Bernard GD)
– properties of anuran eye during metamorphosis 150:329 (Sivak JG, Warburg MR)
– – of cephalopd eye 147:323 (Sivak G)
– – of roach lens 121:135 (Srozyński S)
– system of amphipod eye 147:339 (Nilsson D-E)
– – of crayfish eye 135:1 (Vogt K)
Optics of deep-sea amphipod eyes 145:209 (Land MF)
– of an owl's eye 145:341 (Martin GR)
–, geometrical, of *Notonecta* eye 140:59 (Schwind R)
Optokinetic reflex, interaction with cervical-ocular reflex in rabbits 134:11 (Denia A, et al)
Optomotor response in crickets 142:419 (Honegger H-W)
– – and tracking in a hoverfly 140:145 (Collett TS)
– –, visual acuity of – in a newt 128:359 (Manteuffel G, Himstedt W)
– system, functioning during voluntary flight in a hoverfly 138:271 (Collett TS)
– torque system, three-dimensional, of *Drosophila* 145:321 (Blondeau J, Heisenberg M)
Orchelimum, structure of stridulation 126:343 (Nielsen ET)
Orconectes, amino acid sensitive receptors in legs 144:67 (Bauer U, et al)
–, cytoplasmic receptors for the molting hormones 128:95 (Kuppert P, et al)
–, ecdysteroid secretion by Y-organs 130:347 (Keller R, Schmid E)
–, effect of temperature on neuromuscular performance 143:53 (Jacobs JR, Atwood HL)
–, hyperglycemic neurohormone 141:445 (Keller R)
–, latex particles in hemolymph 132:363 (Merrill DP, et al)

Orconectes, neurosecretory polypeptides in eyestalk 134:303 (Andrew RD, Saleuddin ASM)
–, pyridine receptors 148:221 (Hatt H, Bauer U)
–, sinus gland hormones 122:359 (Keller R)
Orientation, see also astroorientation
–, accuracy of distance messages in bee dances 123:339 (Esch H)
–, accuracy in female crickets to synthetic calls 141:93 (Oldfield BP)
–, accuracy in phonotaxis by treefrogs 133:247 (Rheinlaender J, et al)
–, amphipod phototaxis 135:243 (Forward RB Jr)
– of bees to ultraviolet light 134:151 (Edrich W, et al)
– of bees to unpolarized color patterns 139:225 (Glas HW van der)
–, behavior during and after spring migration period in buntings 137:47 (Wiltschko W, et al)
–, bumblebee foraging movements on vertical inflorescences 134:113 (Waddington KD, Heinrich B)
–, calcium as odorant for migrating salmon 127:157 (Bodznik D)
–, chemical gradient detection by catfish 140:95 (Johnsen PB, Teeter JH)
–, chemotaxis of nematode mutants 137:93 (Dusenbery DB)
–, color receptor participation in bee phototaxis 122:27 (Kaiser W, et al)
– of comb building in honeybees 147:495 (Jong D De)
–, compensation for height in fly groundspeed control 147:485 (David CT)
–, control of compensatory eye responses in a lobster 150:23 (Schöne H, et al)
–, depth vision in toad prey localization 131:179 (Lock A, Collett T)
–, detour behavior of toads 146:261 (Collett TS)
– to earth's magnetic field in salamanders 121:273 (Philips JB)
–, echolocation in *Asellia* 131:161 (Gustafson Y, Schnitzler HU)
–, echolocation by bats 122:201 (Simmons JA, O'Farrell MJ); 125:291 (Simmons JA, et al); 131:161 (Gustafson Y, Schnitzler HU); 132:77 (Fenton MB, Fullard JH); 135:61 (Simmons JA, Stein RA); 145:431 (Kick SA)
–, effect of earth's magnetic field on bee gravity – 122:145 (Martin H, Lindauer M)
–, effects of melatonin and thyroxine on salamander – 136:235 (Adler K, Taylor DH)
–, effects of olfaction on pigeon homing 135:227 (Papi F, et al); 139:209; 143:411 (Wallraff HG); 150:493 (Meschini E)
–, effects of stimuli perceived during displacement on pigeon homing 139:193 (Wallraff HG), 203 (Wallraff HG, et al)
–, effects of wind direction at home loft on pigeon navigation 128:285 (Ioalé P, et al), 297 (Waldvogel JA, et al)
–, endogenously controlled changes in bird migratory direction 125:267 (Gwinner E, Wiltschko W)
–, eye stabilization in *Nautilus* 132:117 (Hartline PH, et al)
–, gravity and idiothetic course control in millipedes 133:267 (Mittelstaedt M-L, et al)
–, homing mechanisms in Italian and American pigeons 128:303 (Papi F, et al)
–, infrasound detection by homing pigeons 129:1 (Kreithen ML, Quine DB); 141:153 (Quine DB, Kreithen ML)
–, lateral line taxis to water waves in *Xenopus* 148:535 (Elepfandt A)
–, magnetic field detection by skate ampullae of Lorenzini 126:333 (Brown HR, Ilyinsky OB)
–, movement learning of flying bees 146:273 (Erber J)
–, nematode mutants defective in thermotaxis 137:353 (Dusenbery DB, Barr J)
–, ocelli and compound eyes in fly phototaxis 135:85 (Hu KG, Stark WS)
–, osmotropotaxis in *Drosophila* 147:479 (Borst A, Heisenberg M)
–, phonotaxis in crickets 144:367 (Pollack GS, Hoy R); 148:431 (Schmitz B, et al)
–, phototaxis in nematodes 134:85 (Burr AH)
–, phototaxis in walking fly 123:307 (Meyer HW); 144:75 (Mimura K)
–, polarization-sensitive response to UV light in flying water bugs 150:87 (Schwind R)
–, polarization sensitivity of fly course control 139:177 (Wolf R, et al)
–, responses of leech to water waves 144:111 (Young SR, et al)
–, role of photoreceptors in bee behavior 133:111 (Edrich W)
–, role of salamander pineal body 124:357 (Taylor DH, Adler K)
–, searching behavior of desert ants 142:315 (Wehner R, Srinivasan MV)
–, temperature dependent phototaxis in alligators 136:243 (Kavaliers M)
–, two mechanisms of chemotaxis in *Paramecium* 127:167 (Houten J Van)
–, use of celestial and magnetic cues by sokeye salmon 147:547 (Quinn TP, Brannon EL)
–, visual course control in three dimensions in a fly 145:321 (Blondeau J, Heisenberg M)
–, visual responses of locusts flying in a wind tunnel 131:39 (Baker PS)
–, water source preference and lakeward migration of salmon fry 127:139 (Bodznik D)
–, wavelength-specific behavior in a butterfly 149:325 (Kolb G, Scherer C)
–, wavelength specific phototaxis in whiteflies 144:83 (Coombe PE)
–, acoustic, of flying crickets 146:207 (Pollack GS, Plourde N)
–, –, of *Rousettus* 136:227 (Suthers RA, Summers CA)
–, celestial and magnetic compass –, in sockeye salmon fry 137:243 (Quinn TP)
–, compass-, variability of response in toad – 144:45 (Adler K, Taylor DH)
–, *e*-vector –, in bees 125:1 (Rossel S, et al)
–, gravity, of bee larvae 137:7 (Ebert R)
–, –, effect of oxygen on snail – 142:51 (Janse C)
–, –, information in cockroach 142:359 (Walthall WW, Hartman HB)
–, –, sensory systems involved in snail – 145:311 (Janse C)
–, olfactory, in a snail 136:267 (Croll RP, Chase R); 143:357 (Chase R, Croll RP)
–, photo –, in the pond snail 149:363 (Duivenboden YA van)
–, substrate –, in lobsters 126:287 (Scapini F, et al); 293 (Schöne H, et al); 129:217 (Neil DM, et al)
–, visual, in walking *Drosophila* 148:471 (Bülthoff H, et al)
–, visual flight –, in *Drosophila* 130:113 (Heisenberg M, Wolf R); 140:69 (Wolf R, Heisenberg M)
– signals of bats during avoidance maneuvers 148:389 (Jen PHS, Kamada T)
Orthetrum, efferent system of lateral ocellus 125:341 (Kondo H)
Oscillators in pinealectomized sparrow circadian system 146:245 (Takahashi JS, Menaker M)
–, different, controlling circadian rhythms in a fly 127:229 (Engelmann W, Mack J)
Osmolality in duck salt gland control 129:301 (Deutsch H, et al)
Osmoreception, cranial, role in Pekin duck salt gland secretion 149:451 (Hammel HT, et al)
Osmoregulation, cell volume regulation in flounder heart ventricle 140:185 (Vislie T)
–, chloride dependent potassium and water transport in teleost erythrocytes 146:9 (Lauf PK)
– of crab muscle fibers in vitro 128:153 (Leader JP, Bedford JJ)
–, effect of carotid blood tonicity on Pekin duck salt gland secretion 149:451 (Hammel HT, et al)
–, lingual salt glands in Crocodilia 149:43 (Taplin LE, et al)
– in mollusc red blood cells 138:283, 291, 299 (Amende LM, Pierce SK)
– by mosquito larval salt-excreting organ 138:59 (Asakura K)
–, muscle fiber water in marine crustaceans 146:113 (Freel RW)
–, role of colon and coprodeum in domestic fowl – 146:51; 147:65 (Rice GE, Skadhauge E)
– in salamanders 145:133 (Degani G)
–, salt gland blood flow in saltwater-adapted Pekin duck 149:457 (Kaul R, et al)
– in a saltwater crocodile 144:261 (Grigg GC)
–, urine formation during diuresis in leech 146:75 (Zerbst-Boroffka I, et al)

Osmotic adaptation in trout after abrupt changes in external salinity 144:175 (Leray C, et al)
– avoidance, defect in nematode mutants 137:93 (Dusenbery DB)
– regulation in the cod 124:149 (Fletcher CR)
– and volume control of diuresis in ducks 146:17 (Simon-Oppermann C, Simon E)
Osmotropotaxis in *Drosophila* 147:479 (Borst A, Heisenberg M)
Otala, enzymes in hepatopancreas 129:129 (Sollock RL, et al)
Otolith, saccular, vibration of perch – 123:85 (Sand O, Michelsen A)
Otolithic sound detection in lemon shark 142:379 (Corwin JT)
Ovary, trehalose absorption in silkworm – 131:333 (Shimada S, Yamashita O)
Overwintering survival of a freeze tolerant beetle 136:53 (Duman JG)
Owl, see *Athene, Strix, Tyto*
Oxygen, appetitive response of a nematode to – 136:333 (Dusenbery DB)
–, effect on snail gravity orientation 142:51 (Janse C)
– affinities of maternal and fetal hemoglobins in a viviparous seaperch 142:523 (Ingermann RL, Terwilliger RC)
– affinity of fetal and maternal blood in a viviparous lizard 142:495 (Grigg GC, Harlow P)
– binding by shrimp hemocyanin, environmental effects on – 143:253 (Miller KI, Holde KE Van)
– – of spider hemocyanin 128:161 (Loewe R)
– –, thermal acclimation of snake blood 130:293 (Johansen K, Lykkeboe G)
– – properties of *Buccinum* hemocyanin 129:97 (Brix O, et al)
– – – of hypoxic trout blood 136:83 (Soivio A, et al)
– consumption in crawling gastropods 147:113 (Houlihan DF, Innes AJ)
– – in hypoxic octopus 148:35 (Houlihan DF, et al)
– – in juvenile snakes 142:489 (Davies PMC, Bennett EL)
– – in a parrot 142:479 (Bucher TL)
– – during swimming in Galapagos marine iguanas 141:531 (Vleck D, et al)
– – in toadfish 142:439 (Ultsch GR, et al)
– –, effect of ambient air pressure on bee – 141:433 (Withers PC)
– –, effect of cAMP on – in dogfish rectal gland 136:39 (Shuttleworth TJ, Thompson JL)
– –, effect of corpora cardiaca-corpora allata system on – in cockroach rectum 138:347 (Tolman JH, Steele JE)
– – in relation to body temperature in the Galapagos iguana 132:285 (Bartholomew GA, Vleck D)
– – by rodent skeletal muscles 128:185 (Grubb B, Folk GE Jr)
– – in the springhare 133:187 (Müller EF, et al)
– –, variation in bushbabies in captivity 126:241 (Perret M)
– debt and recovery from exhaustion in lungless salamander 128:101 (Feder ME, Olsen LE)
– delivery, role in *Xenopus* dehydration 128:169 (Hillman SS)
– dissociation curve of frog blood 129:111 (Tazawa H, et al)
– equilibria of polychaete erythrocruorins 123:177 (Weber RE, et al)
– levels in the crab after emersion into air 132:305 (Wheatly MG, Taylor EW)
– tensions, reduced, in sea cucumber 122:347 (Ellington WR, Hammen CS)
– transport in crayfish blood 123:105 (Angersbach D, Decker H)
– – by shrimp hemocyanin 145:21 (Weber RE, Hagerman L)
– – in tarantula blood 123:113 (Angersbach D)
– –, maternal-fetal, role of erythrocytic organic phosphates on seaperch – 144:253 (Ingermann RL, Terwilliger RC)
– – mechanisms, thermoacclimation of – in trout 140:255 (Nikinmaa M, et al)
– transporting function of carp blood, adaptation to hypoxia 128:127 (Weber RE, Lykkeboe G)
– uptake, effects of exercise on crab – 148:111 (Booth CE, et al)
– –, effect of water restriction on rock hyrax – 138:315 (Rübsamen K, Kettembeil S)
– – in polychaetes 145:45 (Kristensen E)

P

Pacemaker, control of – in *Eigenmannia*'s JAR 136:113 (Heiligenberg W, Bastian J)
–, one – controlls double-peaked activity rhythm in cockroaches 137:249 (Wiedenmann G)
–, circadian, development of mouse – 143:527 (Davis FC, Menaker M)
–, – in rat SCN 146:153 (Inouye ST, Kawamura H)
–, two-oscillator, controlling N-acetyltransferase activity in rat pineal gland 145:539 (Illnerová H, Vaněček J)
Pacemakers that control flashing in fireflies 144:277, 287 (Buck J, et al)
–, neuropharmacological analysis in *Hydra* – 128:71 (Kass-Simon G, Passano LM)
–, pineal and hypothalamic, in Japanese quail 144:381 (Simpson SM, Follett BK)
Pachydactylus, postural mechanisms 131:235 (Meyer DL, et al)
Pachydiplax, ocellar neuron spectral sensitivity 144:91 (Mobbs PG, et al)
Pachygrapsus, muscle fiber water 146:113 (Freel RW)
–, peripheral spike generation and modulation in motor axon 142:309 (Stephens PJ, Atwood HL)
Pacifastacus, sinus gland hormones 122:359 (Keller R)
–, sustaining fibers 146:175; 150:419 (Kirk MD, et al)
Padda, nervous control of syrinx 129:281 (Seller TJ)
–, role of pineal organ and SCN on circadian rhythms 141:207 (Ebihara S, Kawamura H)
Pagothenia, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, neuromuscular function 147:237 (Macdonald JA, Montgomery JC)
–, pressure adaptation of lactate dehydrogenase 129:295 (Siebenaller JF, Somero GN)
Pagurus, dorsal superficial muscles 121:395, 413 (Chapple WD)
Palaemon, gas transport in hemolymph 145:21 (Weber RE, Hagerman L)
Paleognathous birds, microspectrophotometry of photoreceptors 144:271 (Sillman AJ, et al)
Palinurus, antennal proprioception 145:505 (Rossi-Durand C, Vedel JP)
–, control of compensatory eye responses 150:23 (Schöne H, et al)
–, hemocyanin subunits 133:167 (Markl J, et al); 141:495 (Markl J, Kempter B)
–, ionic requirements for neuron bursting activity 145:191 (Gola M, Selverston A)
–, magnet effect in a neuronal oscillator 129:5 (Ayers JL Jr, Selverston AI)
–, neuromuscular strategies of locomotion 128:81 (Ayers J, Clarac F)
–, proprioceptive inputs in legs 130:251 (Vedel JP, Clarac F)
–, reactions to substrate tilt 129:217 (Neil DM, et al)
–, reflex antennal movements 147:259 (Neil DM, et al), 269 (Barnes WJP, Neil DM)
–, substrate orientation 126:287 (Scapini F, et al), 293 (Schöne H, et al); 129:217 (Neil DM, et al)
Pandinus, hemocyanin 130:283 (Markl J, et al)
Panopeus, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
Pantala, efferent system of lateral ocellus 125:341 (Kondo H)
Panulirus, chemosensory interneurons 130:63 (Ache BW, Fuzessery ZM)
–, coagulation 142:473 (Ghidalia W, et al)
–, effect of eyestalk hormones on gastric mill 141:363 (Fleischer AG)
–, ganglionic activation of myocardium 139:67 (Kuramoto T, Kuwasawa K)
–, hemocyanin subunits 133:167 (Markl J, et al)
–, ionic requirements for neuron bursting activity 145:191 (Gola M, Selverston A)
–, magnet effect in a neuronal oscillator 129:5 (Ayers JL Jr, Selverston AI)
–, olfactory excitation of brain interneurons 150:129 (Hamilton KA, Ache BW)
–, sensitivity of foregut muscles to acetylcholine and glutamate 138:187 (Lingle C)

Panulirus, stomatogastric ganglion 122:227 (Mulloney B)
Papilio, extraocular photoreceptors 148:483 (Arikawa K, Aoki K)
–, oscillating haemolymph circulation 139:145 (Wasserthal LT)
–, receptive field of stemmata 146:191 (Ichikawa T, Tateda H)
–, single electrode studies on the retina 150:271 (Horridge GA, et al)
–, spectral sensitivity of larval ocelli 139:41 (Ichikawa T, Tateda H)
Parakeet, see *Melopsittacus*
Paralichthys, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
Paramecium, chemotaxis 127:167 (Van Houten J)
–, ciliary reversal 127:39 (Hildebrand E)
–, mechanoreceptor channels 135:233 (Ogura A, Machemer H)
Parastichopus, muscle contractions 136:103 (Prosser CL, Mackie GO)
Parathyroid hormone, cardiovascular effects in frogs 147:101 (Strickland ML, et al)
– –, effect on renal clearance in turtle 141:463 (Laverty G, Clark NB)
Parmaturus, urea-requiring lactate dehydrogenases 125:135 (Yancey PH, Somero GN)
Paroxysmal depolarization of *Aplysia* neuron 134:29 (Ducreux C, Gola M)
Parrot, see *Bolborhynchus*
Parupygus, jamming avoidance response 124:211 (Heiligenberg W, et al)
Paruroctonus, sense organs for vibration in sand 131:23 (Brownell P, Farley RD)
–, target localization in sand by vibration receptors 131:31 (Brownell P, Farley RD)
–, walking leg motor neurones 140:31 (Bowerman RF, Burrows M)
–, xanthine excretion 142:423 (Yokota SD, Shoemaker VH)
Passer, entrainment of circadian system 146:245 (Takahashi JS, Menaker M)
–, extraretinal photoreception 130:277 (Hartwig HG, Veen T van)
–, lung compliance 138:321 (Perry SF, Duncker H-R)
–, pineal gland and entrainment of activity rhythm 134:339 (Laitman RS, Turek FW)
Passerina, orientation behavior during and after spring migration period 137:47 (Wiltschko W, et al)
Pattern discrimination, visual, in *Drosophila* 146:229 (Mimura K)
– generation in fly flight motor neurons 150:305 (Koenig JH, Ikeda K)
Pecten, octopine accumulation during escape response 124:121 (Gäde G, et al)
Pedetes, thermoregulation 133:187 (Müller EF, et al)
Pedipalpi, hemocyanin of *Tarantula* – 130:283 (Markl J, et al)
Pekin duck, see also *Anas*
– –, arterial chemoreceptors and respiration 133:177 (Bouverot P, et al)
– –, salt gland control 129:301 (Deutsch H, et al)
Pelamis, ventilation and perfusion of lung 145:109 (Seymour RS, et al)
Pelecanus, nictitating membrane 125:335 (Sivak JG, et al)
Pelobates, changing of eye optical properties during metamorphosis 150:329 (Sivak JG, Warburg MR)
Peltodoris, neurons controlling gill movements 131:277 (Dickinson PS)
Penguin, see *Eudyptula*, *Pygoscelis*
Peptides, cardioactive, in *Helix* 128:269, 277; 138:265; 139:333, 341 (Lloyd PE)
Perca, ChAT activity in swimbladder 146:57 (Fänge R, Holmgren S)
–, vibration of saccular otolith 123:85 (Sand O, Michelsen A)
Perch, see *Perca*
Perfusion in sea snake lung 145:109 (Seymour RS, et al)
Perilymph, element composition in cats, lizards and skates 126:1 (Peterson SK, et al)
Periostracin in *Mytilus* 130:301 (Waite JH, et al)
Periplaneta, central excitation of giant interneurons 130:39 (Delcomyn F, Daley DL)
–, cercal nerve responses to wind 133:97 (Westin J); 103 (Dagan D, Camhi JM)
–, cholinergic giant fibers 126:157 (Dagan D, Sarne Y)
–, deutocerebral interneurones 145:447 (Burrows M, et al)
–, escape behavior 128:193 (Camhi JM, Tom W), 203 (Camhi JM, et al); 142:339 (Camhi JM, Nolen TG), 347 (Plummer MR, Camhi JM); 147:471 (Dagan D, Volman S)
–, excitation of leg motor neurons by giant interneurons 125:305 (Ritzmann RE, Camhi JM)
–, flight activity mediated by dorsal giants 147:313 (Ritzmann RE, et al)
–, food odor processing by antennal olfactory receptors 144:509 (Selzer R)
–, food odor specific neurones in deutocerebrum 134:159 (Selzer R)
–, gustatory responses to methyl glycosides 141:297 (Jakinovich W, et al)
–, hygroreceptor mechanism 124:53 (Yokohari F)
–, mechanoreceptor afferents 150:121 (Dagan D, et al)
–, mechanotransduction in tactile spine 147:251 (French AS, Kuster JE)
–, modulation of giant interneuron excitability during walking 138:231, 241 (Daley DL, Delcomyn F)
–, movement signalling interneurons 150:185 (Delcomyn F)
–, ocellar L-neurons 149:215 (Mizunami M, et al)
–, olfactory receptors on the antenna 128:227 (Sass H)
–, oxygen consumption in rectum 138:347 (Tolman JH, Steele JE)
–, paired stimulation of giant interneurons 143:61 (Ritzmann RE, Pollack AJ), 71 (Ritzmann RE)
–, recovery from lesions in the escape system 146:291, 299 (Vardi N, Camhi JM)
–, responses of giant interneurones to wind 121:307 (Westin J, et al)
–, sensory basis for directional wind detection 147:471 (Dagan D, Volman S)
–, sugar reception 124:353 (Wieczorek H)
–, visual interneurons in optic lobe 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
–, water transport in rectum 138:357 (Steele JE, Tolman JH)
Periwinkle, see *Littorina*
Peromyscus, daily torpor 125:157 (Lynch GR, et al)
–, effect of pinealectomy on reproduction and brown fat 144:145 (Glass JD, Lynch GR)
–, effects on water balance 133:241 (Esher RJ, Wolfe JL)
–, evaporative water loss 128:177 (Edwards RM, Haines H)
Petaurus, gliding flight 133:89, 339 (Nachtigall W)
Petromyzon, synaptic inhibition in moto- and interneurons during fictive swimming 147:189 (Kahn JA)
–, trigeminal sensory neurons 123:329 (Matthews G, Wickelgren WO)
Phaenicia, contrast frequency-dependence of visual behavioral responses 145:241 (Eckert H, Hamdorf K)
–, giant fibers in the optic lobe 126:57 (Eckert H, Bishop LG)
–, H1-neurone in third optic ganglion 135:29 (Eckert H)
–, horizontal cells in the lobula plate 143:511 (Eckert H)
–, vertical-horizontal neuron in lobula plate 149:195 (Eckert H)
Phalacrocorax, nictitating membrane 125:335 (Sivak JG, et al)
Phascolarctos, metabolism and heat balance 134:293 (Degabriele R, Dawson TJ)
Pheromone, responses of *Ips* olfactory receptor cells to – 121:343 (Mustaparta H, et al)
–, bark-beetle, reception by a predaceous clerid beetle 150:371 (Hansen K)
–, female, cockroach deutocerebral interneurones responding to – 145:447 (Burrows M, et al)
– production, prerequisites in *Danaus* 126:97 (Boppré M, et al)
– sensitivity of moth deutocerebrum 132:235 (Boeckh J, Boeckh V)
Pheromones, olfactory cell responses in *Adoxophyes* 121:205 (Den Otter CJ)
–, responses of tick olfactory sensilla to tick related odors 148:411 (Waladde SM)
Philander, body temperature and metabolism 125:115 (McNab BK)
Philodromus, subzero temperature tolerance 131:347 (Duman JG)

Phoca, organic ion transport in kidney 149:19 (Hong SK, et al)
Phodopus, effect of brief light pulses on photoperiodic reaction 148:529 (Hoffmann K)
–, extraretinal photoreception 130:277 (Hartwig HG, Veen T van)
–, metabolism and thermoregulation 145:127 (Weiner J, Górecki A)
–, seasonal control of energy requirements 142:429 (Heldmaier G, Steinlechner S)
–, seasonal thermogenesis and cold resistance 149:1 (Heldmaier G, et al)
Phonation, see sound production
Phonotaxis, accuracy in treefrog – 133:247 (Rheinlaender J, et al)
–, in crickets 148:431 (Schmitz B, et al)
– to rhythmic components in cricket calling song 144:367 (Pollack GS, Hoy R)
Phormia, field potentials and second-order neurons of visual system 126:297 (Zimmerman RP)
–, labellar lobe spreading 121:115 (Pollack GS)
–, physiology of feeding preferences 139:59 (Rachman NJ)
–, properties of wings in flight 133:351 (Nachtigall W)
–, responses of visual interneurons in optic lobe 141:123 (Eriksson ES)
–, survival in non-24-h LD cycles 127:191 (Saint Paul U von, Aschoff J)
Phosphagens in *Tubifex* 143:237 (Hoffmann KH)
Phosphate, renal clearance of – in turtle 141:463 (Laverty G, Clark NB)
– binding by llama and camel hemoglobin 136:67 (Bauer C, et al)
Phosphates, organic, in fetal and maternal seaperch erythrocytes 144:253 (Ingermann RL, Terwilliger RC)
Phosphoenolpyruvate carboxykinase, role in gluconeogenesis in anaerobic invertebrates 149:477 (Mustafa T, et al)
– –, role in *Tubifex* energy metabolism 130:337 (Hoffmann KH, et al)
Phosphokinases in *Tubifex* 143:237 (Hoffmann KH)
Phospholipids in washings from frog lungs 139:117 (Vergara GA, Hughes GM)
Phosphorylase activity, development in chick pectoral muscle 141:439 (Wittenberger C, Coprean D)
Photic stimulation, effect on ATPases in fly eyes and brain 123:245 (Rivera ME, Langer H)
Photinus, spectral mechanism of compound eye 135:21 (Lall AB, et al)
Photocytes, electrophysiology of – in a polychaete worm 129:67 (Herrera AA)
Photo-orientation in the pond-snail 149:363 (Duivenboden YA van)
Photoperiod, effect of brief light pulses on hamster – 148:529 (Hoffmann K)
–, effect on daily torpor in a mouse 125:157 (Lynch GR, et al)
–, effect on newt leucocytes 125:205 (Bennett MF, Reap LE)
–, effect on slug sexual maturation 133:117 (McCrone EJ, Sokolove PG)
Photoperiodic clock, diversity in insects 127:197 (Saunders DS)
– control of a complex seasonal rhythm 142:227 (Randall W)
– – of slug maturation 125:317 (Sokolove PG, McCrone EJ)
– – of snail circannual rhythms 142:89 (Bailey SER)
– induction in *Sarcophaga* 124:75; 132:179 (Saunders DS)
– responses of hamster testes 132:277 (Ellis GB, Turek FW)
– time measurement in Japanese quail 145:381 (Simpson SM, Follett BK)
– – – in a lizard 125:143 (Underwood H)
– – – in spider mites 134:203, 218 (Vaz Nunez M, Veerman A)
Photoperiods, effects on sleep, motor activity and feeding in the rat 124:1 (Borbély AA, Neuhaus HU)
–, ultra-short, effect on fly seasonal clock 145:421 (Saunders DS)
Photopigment, see also visual pigment
– Model of vision in invertebrates 135:209 (Razmjoo S, Hamdorf K)
Photopigments of fly R1–6 121:289 (Stark WS, et al)
Photoreceptor, structural changes in locust light-deprived rhabdom 144:357 (Bloom JW, Atwood HL)
–, ventral, of *Limulus*, components of light response 141:303 (Maaz G, et al)
– arrangement in *Deilephila* 129:257 (Schlecht P)
– degeneration mutant of *Drosophila*, visual learning 127:29 (Bicker G, Reichert H)
– noise, suppression by oxidative metabolism 142:181 (Payne R)
– performance and membrane turnover in locusts 150:509 (Williams DS)
– sensitivity and ion gradient in insect eyes 125:237 (Hamdorf K, et al)
– – in spider posterior median eye 141:53 (Laughlin S, et al)
– ultrastructure and potentials in moth developing pupal eye 150:153 (White RH, et al)
Photoreceptors, arhabdomeric cells in scorpion median eye 130:265 (Schliwa M, Fleissner G)
–, bumps in locust – 122:189 (Lillywhite, PG)
–, cellular identification of crayfish violet receptor 142:199 (Cummins D, Goldsmith TH)
–, color receptors in *Deilephila* 123:239 (Schlecht P, et al)
–, coupling between locust – 125:13 (Lillywhite PG)
–, dark induced membrane changes in crayfish – 131:191 (Eguchi E, Waterman TH)
–, dark recovery of fly – 122:215 (Moring J, Järvilehto M)
–, diurnal changes in angular sensitivity of crab – 144:99 (Leggett LMW, Stavenga DG)
–, effect of light on crab rhabdom synthesis 142:19 (Stowe S)
–, electrophysiology of fly R1–6 and R7/8 129:19 (Hardie RC)
–, functional characteristics of – in ant compound eyes and ocelli 137:63 (Mote MI, Wehner R)
–, interaction between flesh-fly – 125:209 (Mimura K)
–, ionic effects on blowfly receptor potentials 132:87 (Muijser H)
–, light adaptation in fly – 132:153 (Moring J, et al)
–, light adaptation in insect – 145:169 (Matić T, Laughlin SB)
–, light/dark transformations in crayfish – 145:179 (Tsutsumi V, et al)
–, localization of K and Ca in cricket ommatidium 127:245 (Burovina IV, et al)
–, membrane turnover in crab light and dark adaptation 131:205 (Nässel DR, Waterman TH)
–, microspectrophotometry of emu and tinamou – 144:271 (Sillman AJ, et al)
–, non-linearity and light adaptation in fly – 144:53 (Dubs A)
–, photostable pigment in fly R7 125:275 (Kirschfeld K, et al)
–, receptive field patterns in fly – 141:349 (Mimura K)
–, regional differences in performance in mantis eye 131:95 (Rossel S)
–, responses of *Loligo* – 122:241 (Pinto LH, Brown JE)
–, responses of white-eyed *Procambarus* – 122:273 (Kong K-L, Goldsmith TH)
–, role in bee orientation behavior 133:111 (Edrich W)
–, screening pigment migration in crayfish – 125:91 (Olivo RF, Larsen ME)
–, second spectral class of retinular cell in crab compound eyes 145:549 (Martin FG, Mote MI)
–, spectral preference in *Drosophila* – 121:241 (Hu KG, Stark WS)
–, spectral sensitivity of fly – 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al), 41 (Smola U, Meffert P); 134:95 (Bernard GD, Stavenga DG)
–, spectral sensitivity and tiering of spider – 145:227 (Blest AD, et al)
–, spectrosensitometry of beetle – 142:95 (Gribakin FG)
–, temporal resolving power of locust – 144:61 (Howard J)
–, twisted rhabdomeres in insect eyes 133:291 (Smola U, Tscharntke H); 134:109 (Ribi WA); 142:1 (Wehner R, Meyer F), 43 (Smola U, Wunderer H)
–, visual pigments of *Drosophila* R1–6 140:275 (Stark WS, Johnson MA)
–, extraocular, on lepidopteran genitalia 148:483 (Arikawa K, Aoki K)

Photoreceptors, extraretinal, in vertebrate brains 130:277 (Hartwig HG, Veen T van)
–, non-ocular, role in pond snail photo-orientation 149:363 (Duivenboden YA van)
–, sex-specific, in flies 145:139 (Hardie RC, et al)
–, specialized, at dorsal rim of bee compound eye 141:19 (Labhart T)
Photosensitive neurons, cerebral, in spiders 140:467 (Yamashita S, Tateda H)
Photosensitivity, *Drosophila* circadian clock 122:87 (Winfree AT, Gordon H)
–, white-eyed *Procambarus* retinula cells 122:273 (Kong K-L, Goldsmith TH)
Photosensory function of pike pineal organ 144:127 (Falcón J, Meissl H)
Photostable pigment in fly R 7 125:275 (Kirschfeld K, et al); 143:3 (McIntyre P, Kirschfeld K)
Phototactic behaviour, *Apis* 122:27 (Kaiser W, et al)
– –, light induced modification in *Drosophila* 129:35 (Willmund R)
– – of walking flies 144:75 (Mimura K)
– –, wavelength specific, of whiteflies 144:83 (Coombe PE)
Phototaxis, color contrast in walking flies 130:161 (Fischbach KF)
– in nematodes 134:85 (Burr AH)
–, role of fly ocelli and compound eyes 135:85 (Hu KG, Stark WS)
– of a sand-beach amphipod 135:243 (Forward RB Jr)
–, spontaneous reactions in walking flies 123:307 (Meyer HW)
–, temperature dependent, in alligators 136:243 (Kavaliers M)
Photuris, larval luminescence 148:503 (Christensen TA, Carlson AD)
–, spectral sensitivity and selective adaptation 147:195 (Lall AB, et al)
Phronima, optics of the eyes 145:209 (Land MF)
Phyllomedusa, kidney and bladder function 133:211 (Shoemaker VH, Bickler PE)
Physalaemus, recognition of FM calls 150:217 (Ryan MJ)
Physiology of scallop escape response 137:97 (Thompson RJ, et al)
Piabucina, air breathing 122:295 (Graham JB, et al)
Pica, see *Ochotona*
Picrotoxin, effect on lobster neural pattern generator 139:1 (Young RE, et al)
Pierid butterflies, tracheal tapetum lucidum 132:1 (Ribi WA)
Pieris, color receptors in larval eyes 149:317 (Ichikawa T, Tateda H)
–, epidermal cell cycle during last larval instar 136:11 (Lhonoré J, et al), 21 (Beydon P, et al)
–, red eye glow 132:1 (Ribi WA)
–, stretch receptor in bursa copulatrix 130:191 (Sugawara T)
–, wavelength specific behavior 149:325 (Kolb G, Scherer C)
Pig, potassium relaxation of smooth muscle 135:357 (Webb RC, Bohr DF)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Pigeon, behavioral and autonomic thermo regulation 133:151 (Schmidt I, Simon E)
–, body-to-brain temperature difference 129:119 (Kilgore DL, et al)
–, brain temperature 129:115 (Bernstein MH, et al)
–, cold defense responses during sleep and wakefulness 136:77 (Hohtola E, et al)
–, effect of olfaction on homing 135:227 (Papi F, et al); 139:209 (Wallraff HG); 150:493 (Meschini E)
–, extraretinal photoreceptors 130:277 (Hartwig HG, Veen T van)
–, homing and stimuli perceived during displacement 139:193, (Wallraff HG), 203 (Wallraff HG, et al)
–, infrasound detection 129:1 (Kreithen ML, Quine DB); 141:153 (Quine DB, Kreithen ML)
–, lung compliance 138:321 (Perry SF, Duncker H-R)
–, navigation 128:285 (Ioalè P, et al), 297 (Waldvogel JA, et al), 303 (Papi F, et al); 143:411 (Wallraff HG)
–, olfactory pathway 137:39 (Macadar AW, et al)
–, role of crop milk feeding 135:97 (Vandeputte-Poma J)
–, temperature sensitive receptors in feathered skin 135:201 (Necker R, Reiner B)
–, thermal influence on spinal motoneurons 139:251 (Görke K)
–, thermoregulation 126:151 (Rosner G), 211 (Walsberg GF, et al); 127:75 (Schmidt I); 144:375 (Sieland M, et al); 146:201 (Schmidt I)
–, vasoactive properties of urotensins 126:193 (Woo NYS, Bern HA)
–, wavelength discrimination 141:47 (Emmerton J, Delius JD)
Pigment, photostable, in fly photoreceptors 125:275 (Kirschfeld K, et al)
– content changes in *Pieris* larvae 136:11 (Lhonoré J, et al), 21 (Beydon P, et al)
– migration in crayfish retinula cells 125:91 (Olivo RF, Larsen ME)
– –, dynamics in insect superposition eyes 143:491 (Dreisig H)
– – in dragonfly ocelli 129:199 (Stavenga DG, et al)
– – in moth retina 143:305 (Hamdorf K, Höglund G)
– migrations, ionic dependence of – in crayfish retina 144:35 (Frixione E, Aréchiga H)
Pigments, visual, see visual pigments
Pimephales, predator avoidance response 147:371 (Webb PW)
Pineal body, role in salamander orientation 124:357 (Taylor DH, Adler K)
– eye in *Xenopus* embryos and larvae controlling locomotor activity 145:413 (Foster RG, Roberts A)
– gland, N-acetyltransferase-activity in chicken 139:103; 140:181 (Binkley S, et al)
– –, pacemaker driving circadian rhythm of N-acetyltransferase activity in rat – 145:539 (Illnerová H, Vaněček J)
– –, photoreception of turtle – 140:173 (Meissl H, Ueck M)
– –, role in entrainment of sparrow activity rhythm 134:339 (Laitman RS, Turek FW)
– organ, photosensory function of pike – 144:127 (Falcón J, Meissl H)
– –, role in behavioral thermoregulation rhythms of a fish 146:235 (Kavaliers M)
– –, role in control of sparrow circadian rhythms 141:207 (Ebihara S, Kawamura H)
– pacemakers regulating quail circadian rhythmicity 144:381 (Simpson SM, Follett BK)
Pinealectomy, effect on burbot circadian rhythms 136:215 (Kavaliers M)
–, effects on ground squirrel annual cycles 146:501 (Phillips JA, Harlow HJ)
–, effect on lizard circadian organization 141:537 (Underwood H)
–, effect on reproduction and brown fat in white-footed mouse 144:145 (Glass JD, Lynch GR)
–, effect on sparrow circadian system 146:245 (Takahashi JS, Menaker M)
–, effect on starling circannual testicular rhythm 136:345 (Gwinner E, Dittami J)
–, effects on starling circadian locomotor activity rhythms 126:123 (Gwinner F)
Pinfish, see *Lagodon*
Pinnotheres, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
Pipistrellus, acoustic behavior in the field 142:67 (Miller LA, Degn HJ)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Pisces, acid-base regulation in *Anguilla* and *Salmo* blood plasma 140:249 (Thomas S, et al)
–, acidosis and Ca distribution in *Platichthys* myocardium 143:245 (Gesser H, Poupa O)
–, active phase coupling in electric fish 128:235 (Langner G, Scheich H)
–, acoustic evoked activity in shark brains 129:223 (Bullock TH, Corwin JT)
–, acute tolerance to alcohols in *Carassius* 142:61 (Hill MW, et al)
–, adenosine effects on *Salmo* gills 130:325 (Colin DA, et al)
–, adrenergic control of *Gadus* circulation 137:145 (Wahlqvist I, Nilsson S)
–, adrenergic innervation of teleost hearts 147:85 (Donald J, Campbell G)
–, adrenergic regulation of chloride secretion in *Fundulus* 145:29 (Mendelsohn SA, et al)
–, air breathing 122:295 (Graham JB, et al)
–, alarm substance effects on *Gymnocorymbus* 123:281 (Pfeiffer W, Riegelbauer G)

Pisces, ampullary electroreceptors in *Potamotrygon* 138:225 (Szamier RB, Bennett MVL)
–, ampullary electroreceptors in *Scaphyrhinchus* 138:213 (Teeter JH, et al)
–, anaerobic CO_2 production in *Carassius* 149:75 (Thillart G van den, Verbeek R)
–, anaerobic energy metabolism of *Anguilla* 149:469 (Waarde A van, et al)
–, anaerobic energy metabolism of *Carassius* 136:45; 146:41 (Thillart G van den, et al)
–, anaesthetics temperature and behavior in *Carassius* 135:327 (Hill MW, et al)
–, antidiuretic effects of urophysial extracts 135:183 (Ichikawa T)
–, atrial adrenoceptors in *Salmo* 139:109 (Ask JA, et al)
–, auditory temporal discrimination by *Carassius* 147:201 (Fay RR)
–, behavioral responses of mormyrids to complex impedances 145:459 (Meyer JH)
–, behavioral thermoregulation and preoptic lesions in *Lepomis* and *Carassius* 129:193 (Nelson DO, Prosser CL)
–, blood oxygen binding properties of hypoxic *Salmo* 136:83 (Soivio A, et al)
–, blood oxygen during exercise in *Negaprion* 147:41 (Bushnell PG, et al)
–, blood respiratory properties of *Salmo* 145:117 (Tetens V, Lykkeboe G)
–, branchial transport enzymes in *Gillychthys* 145:51 (Doneen BA)
–, buffering capacity and anaerobic potential of muscle 143:191 (Castellini MA, Somero GN)
–, calcium and ionic transport in *Mugil* gill 141:511 (Pic P, Maetz J)
–, calcium as odorant for migrating *Oncorhynchus* 127:157 (Bodznik D)
–, catecholamine effects on *Anguilla* ventilation 129:343 (Peyraud-Waitzenegger M)
–, catecholamine effects on *Gadus* vasculature 137:139 (Wahlqvist I)
–, catecholamines in *Scyliorhinus* 127:325 (Butler PJ, et al)
–, cerebellar action in *Scyliorhinus* reflex movement 134:69 (Paul DH, Roberts BL)
–, chemical gradient detection by *Ictalurus* 140:95 (Johnsen PB, Teeter JH)
–, chemical synapse in *Kryptopterus* and *Ictalurus* 126:147 (Roth A)
–, chemo- and mechanoreception in *Ictalurus* 147:217 (Davenport CJ, Caprio J)
–, chloride extrusion in *Lagodon* isolated gill 141:471 (Farmer LL, Evans DH)
–, chloride permeability of *Anguilla* intestine 145:73 (Ando M)
–, choline acetyltransferase in swimbladders 146:57 (Fänge R, Holmgren S)
–, circadian rhythms of *Lota* 136:215 (Kavaliers M)
–, compass orientation of *Oncorhynchus* 137:243 (Quinn TP); 147:547 (Quinn TP, Brannon EL)
–, contractile properties of *Cyprinus* muscle fibers 149:441 (Granzier HLM, et al)
–, counteraction of central tonus asymmetries in goldfish 150:473 (Graf W, Meyer DL)
–, crystalline lens of *Rutilus* 121:135 (Srożyński S)
–, cyclic AMP stimulation of *Scyliorhinus* rectal gland secretion 140:209 (Shuttleworth TJ, Thompson JL)
–, cytochalasin and ionic excretion in *Mugil* gill 141:523 (Pic P, Lahitte P)
–, detection of stationary objects by *Anoptichthys* 143:369 (Campenhausen C v, et al), 375 (Weissert R, Campenhausen C v)
–, difference in blood oxygen levels in *Channa* heart outflow vessels 149:435 (Ishimatsu A, Itazawa Y)
–, directional hearing by *Gadus* 122:1 (Hawkins AD, Sand O); 150:175 (Buwalda RJA, et al)
–, drug effects on *Gadus* circulation 137:131 (Pettersson K, Nilsson S)
–, effect of medium salinity on direct current electric fields in teleost species 141:277 (Butsuk SV, Bessonov BI)
–, effects of adrenaline on gill potentials in *Platichthys* 124:129 (Shuttleworth TJ)
–, effects on cardiac contractility in *Pleuronectes* 131:293 (Gesser H, Poupa O)
–, effects of copper on ionic regulation by *Platichthys* gills 149:83 (Stagg RM, Shuttleworth TJ)
–, effects of hypoxia in *Scyliorhinus* 132:297 (Butler PJ, et al)
–, effects of pituitary hormones on plasma thyroid hormones in *Salmo* 124:105 (Milne RS, Leatherland JF)
–, electrolocation of *Apteronotus* 144:465, 481 (Bastian J)
–, electrolocation under jamming in *Sternopygus* and *Eigenmannia* 125:285 (Matsubara J, Heiligenberg W)
–, electroreception in *Ictalurus* cerebellum 145:289 (Tong SL, Bullock TH)
–, electroreception in *Xenomystus* 148:345 (Bullock TH, Northcutt RG)
–, electroreceptive afferents in *Eigenmannia* 148:287 (Heiligenberg W, Dye J)
–, electroreceptive feedback in *Hypopomus* 138:173 (Heiligenberg W)
–, electroreceptor functioning in *Ictalurus* 121:381 (Bauswein E); 137:273 (Bretschneider F, et al)
–, electroreceptor tuning in *Eigenmannia* 133:317, 327 (Viancour TA)
–, electroreceptor variability in *Hypopomus* 121:53 (Bastian J)
–, energetics of development in *Salvelinus* 149:485 (Gruber K, Wieser W)
–, energy demand of *Macrozoarces* white muscle 141:425 (Driedzic WR, et al)
–, EOD field of *Apteronotus* 135:283 (Hoshimiya N, et al)
–, EOD pacemaker control in *Hypopomus* and *Gymnotus* 141:197 (Baker CL Jr)
–, EOD in *Pollimyrus* 122:251; 127:45 (Westby GWM, Kirschbaum F)
–, EOD sex differences in *Pollimyrus* 145:399 (Westby GWM, Kirschbaum F)
–, EOD sound response in weakly electric fish 143:435 (Kramer B, et al)
–, epinephrine effects in *Myoxocephalus* isolated head 138:79 (Claiborne JB, Evans DH)
–, erythrocytic organic phosphates of fetal and adult *Embiotoca* 144:253 (Ingermann RL, Terwilliger RC)
–, extraretinal photoreceptors of *Anguilla* and *Ictalurus* 130:277 (Hartwig HG, Veen T van)
–, evolutionary temperature adaptation of sarcoplasmic reticulum 135:157 (McArdle HJ, Johnston IA)
–, exercise training in *Pollachius* muscle 135:147 (Johnston IA, Moon TW)
–, eye positions in *Carassius* and *Leucaspius* 128:241 (Graf W, Meyer DL)
–, fast-start responses in goldfish following Mauthner cell lesions 145:485 (Eaton RC, et al)
–, frequency discrimination of *Aplocheilus* 143:485 (Bleckmann H, et al)
–, frequency response of *Gymnotus* electroreceptors 134:191 (Watson D, Bastian J)
–, gill flow patterns in *Ophiodon* 133:233 (Farrell AP, et al)
–, gill potentials of *Salmo* 126:277 (McWilliams PG, Potts WTW)
–, gluconeogenesis in *Anguilla* hepatocytes 132:343 (Hayashi S, Ooshiro Z); 135:115, 127 (Renaud JM, Moon TW)
–, hearing in *Eupomacentrus* species 140:135 (Myrberg AAJr, Spires JY)
–, hearing differences between *Adioryx* and *Myripristis* 132:203 (Coombs S, Popper AN)
–, hormonal control of *Sarotherodon* chloride secretion 146:27 (Foskett JK, et al)
–, how *Eigenmannia* electroreceptors encode JAR-eliciting stimulus regimes 142:295 (Heiligenberg W, Partridge BL)
–, hyper-osmotic cell volume regulation in *Platichthys* heart ventricle 140:185 (Vislie T)
–, hypoxic response of *Salmo* secondary lamellae 145:37 (Soivio A, Tuurala H)
–, inner ear lymph of *Raja* 126:1 (Peterson SK, et al)
–, innervation of *Gadus* fast muscle 143:123 (Altringham JD, Johnston IA)
–, innervation of *Gadus* gills 129:179 (Pettersson K, Nilsson S)
–, innervation of *Gadus* iris 138:149 (Nilsson S)
–, inotropic effects of adrenaline on trout and eel myocardium 147:123 (Gesser H, et al)
–, internal dynamics of *Pollachius* schools 144:313 (Partridge BL)
–, interspecific variation in K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, intestinal absorption in *Sarotherodon* 146:1 (Mainoya JR)

Pisces, ion regulation by *Platichthys* gills 147:93 (Stagg RM, Shuttleworth TJ)
–, ion and water transport in *Anguilla* intestine 138:87 (Ando M)
–, ionic composition of *Plotosus* electroreceptor 126:115 (Okitsu S, et al)
–, ionic and respiratory regulation in *Salmo* 134:351 (Bath RN, Eddy FB)
–, isolated, perfused head of *Opsanus* 149:107 (Oduleye SO, et al), 115 (Oduleye SO, Evans DH)
–, jamming avoidance response in *Eigenmannia* 127:267 (Heiligenberg W, et al); 136:113 (Heiligenberg W, Bastian J), 135 (Bastian J, Heiligenberg W), 153 (Partridge BL, Heiligenberg W)
–, jamming avoidance response in gymnotoid pulse-species 124:211 (Heiligenberg W, et al); 136:165 (Baker CL Jr)
–, lanthanum effects on *Carassius* gill ion fluxes 129:145 (Eddy FB, Bath RN)
–, lateral line lobe of goldfish 127:61 (Caird DM)
–, low temperature dormancy in *Ictalurus* 148:41 (Crawshaw LI, et al)
–, magnetic field detection of ampulae of Lorenzini in *Raja* and *Trygon* 126:333 (Brown HR, Ilyinsky OB)
–, Mauthner cell of *Pseudopleuronectes* 143:541 (Zottoli SJ)
–, Mauthner cell function in *Brachydanio* larvae 140:337 (Eaton RC, Kimmel CB), 343 (Kimmel CB, et al)
–, Mauthner cell function in goldfish 144:521 (Eaton RC, et al)
–, melanophore potentials in *Noemacheilus* 131:13 (Collis CS)
–, mesencephalic trigeminal neurons in *Cyprinus* 141:157 (Jüch PJW)
–, myoglobin content and enzymes of energy metabolism in *Hemitripterus* and *Macrozoarces* hearts 149:67 (Driedzic WR, Stewart JM)
–, Na and Cl excretion by the gills of *Mugil* and *Fundulus* 123:155 (Pic P)
–, Na-ATPase and NaK-ATPase in trout gills 124:9 (Pfeiler E)
–, Na/NH_4 exchange in *Salmo* perfused gill 124:181 (Payan P)
–, neural basis of a sensory filter in *Eigenmannia* JAR 139:153 (Partridge BL, et al)
–, neural correlates of electrolocation in *Sternopygus* and *Eigenmannia* under jamming 149:339 (Matsubara JA)
–, neural temperature compensation in poikilotherms 142:411 (Macdonald JA)
–, neuromuscular function in *Pagothenia* 147:237 (Macdonald JA, Montgomery JC)
–, nociceptors in dogfish gill 130:1 (Poole CA, Satchell GH)
–, nucleus praeminentialis of *Ictalurus* 145:299 (Tong SL)
–, N. mescencephali exterolateralis and electrocommunication in *Gnathonemus* 144:327 (Moller P, Szabo T)
–, olfaction and taste in *Ictalurus* 123:357 (Caprio J)
–, olfactory bulb units of *Oncorhynchus* 127:147 (Bodznik D)
–, optics of *Pseudopleuronectes* eye 146:345 (Sivak JG)
–, oro-pharyngeal taste system of *Ictalurus* 150:345 (Kanwal JS, Caprio J)
–, osmoregulation of *Opsanus* erythrocytes 146:9 (Lauf PK)
–, osmotic adaptation and gill energetics in *Salmo* 144:175 (Leray C, et al)
–, osmotic and ionic regulation in *Gadus* 124:149, 157 (Fletcher CR)
–, oxygen affinities of maternal and fetal hemoglobin in *Embiotoca* 142:523 (Ingermann RL, Terwilliger RC)
–, oxygen consumption in *Opsanus* 142:439 (Ultsch GR, et al)
–, oxygen consumption in *Scyliorhinus* rectal gland 136:39 (Shuttleworth TJ, Thompson JL)
–, peripheral auditory physiology in *Negaprion* 142:379 (Corwin JT)
–, peripheral olfactory responses from *Anguilla* 148:379 (Silver WL)
–, photosensory function of *Esox* pineal organ 144:127 (Falcón J, Meissl H)
–, plasma cortisol in *Salmo* 146:123 (Schmidt SP, House EW)
–, predator avoidance response in *Pimephales* 147:371 (Webb PW)
–, pressure adaptation of lactate dehydrogenases of shallow- and deep-living marine fishes 129:295 (Siebenaller JF, Somero GN)
–, prey localization by *Aplocheilus* 140:163 (Bleckmann H); 145:331 (Bleckmann H, Schwartz E); 149:399 (Müller U, Schwartz E)
–, prolactin regulation in *Oncorhynchus* 140:217 (Brewer KJ, McKeown BA)
–, properties of lactate dehydrogenases in teleosts and elasmobranchs 125:129, 135 (Yancey PH, Somero GN)
–, properties of *Salmo* liver mitochondria 143:269, 275 (Suarez RK, Hochachka PW)
–, pyruvate carboxylase from *Salmo* liver 143:281 (Suarez RK, Hochachka PW)
–, pyruvate kinase functions in *Euthynnus* 129:185 (Guppy M, Hochachka PW)
–, rapid changes in *Salmo* blood acid-base status 148:123 (Thomas S, Le Ruz H)
–, respiration in *Scyliorhinus* 132:289 (Short S, et al)
–, respiratory neuron activity in *Cyprinus* brain 133:131 (Ballintijn CM, et al)
–, respiratory properties of *Cyprinus* blood 128:117 (Lykkeboe G, Weber RE), 127 (Weber RE, Lykkeboe G)
–, responses to moving stimuli in *Carassius* optic tectum 128:13 (Riemslag FCC, Schellart NAM)
–, role of glucosephosphate isomerase in *Fundulus* 138:49 (Palumbi SR, et al)
–, role of lateral line in *Pollachius* schooling 135:315 (Partridge BL, Pitcher TJ)
–, saccular otolith of *Perca* 123:85 (Sand O, Michelsen A)
–, salting-out effect in swimbladder rete 146:129 (Gerth WA, Hemmingsen EA)
–, seasonal changes of catecholamine effects in *Anguilla* 138:367 (Peyraud-Weitzenegger M, et al)
–, sensitivity of *Kryptopterus* electroreceptors 147:329 (Roth A)
–, sensory functions of *Platyrhinoidis* cerebellum 148:399 (Tong SL, Bullock TH)
–, sodium cotransport systems in *Pseudopleuronectes* 135:175 (Eveloff J, et al)
–, starvation and enzymes in *Pleuronectes* 136:31 (Moon TW, Johnston IA)
–, structure and function of *Arius* ear 144:27 (Popper AN, Tavolga WN)
–, sympathetic control of *Gadus* gill blood flow 144:157 (Nilsson S, Pettersson K)
–, sympathetic control of *Gadus* vasculature 144:153 (Wahlqvist I, Nilsson S)
–, synaptic transmission in *Kryptopterus* electroreceptor 142:371 (Teeter JH, Bennett MVL)
–, systemic vasculature in *Salmo* 122:325 (Wood CM)
–, temperature acclimation and adenine nucleotides in *Salvelinus* muscle 139:127 (Walesby NJ, Johnston IA)
–, temperature acclimation of *Carassius* muscles 124:111 (Johnston I, Lucking M)
–, temperature adaptation and calcium regulation of actomyosin ATPases 129:163 (Johnston IA), 169 (Johnston IA, Walesby NJ)
–, temperature adaptation and membrane turnover in *Salmo* 149:11 (Hazel JR, Neas NP)
–, temperature effects on pH optima of enzymes in *Salmo* 123:97 (Hazel JR, et al)
–, temperature effects on *Salmo* atrial adrenoceptors 143:161 (Ask JA, et al)
–, thermal acclimation and hepatic lipogenesis in *Salmo* 134:321 (Hazel JR, Prosser CL)
–, thermal limits for *Carassius* behavioral function 129:241 (Hoyland J, et al)
–, thermoacclimation of oxygen transport in *Salmo* 140:255 (Nikinmaa M, et al)
–, thermoregulation rhythms in *Catostomus* 146:235 (Kavaliers M)
–, torus longitudinalis of *Eugerres* and *Holocentrus* 150:39 (Northmore DPM, et al)
–, transaminase reactions in anaerobic *Carassius* 147:53 (Waarde A van, et al)
–, vision and electroreception in *Apteronotus* 147:287 (Bastian J)
–, water exchanges in *Anguilla* gills 124:137 (Isaia J, Isaia A)
–, water source preference of *Oncorhynchus* fry 127:139 (Bodznik D)
Pituitary hormones, effects on plasma thyroid hormones in the trout 124:105 (Milne RS, Leatherland JF)

Placopecten, physiological and biochemical aspects of escape response 137:97 (Thompson RJ, et al), 105 (Zwaan A de, et al)
Planarian, see *Polycelis*
Planorbarius, activity patterns in motoneurones 142:259 (Brace RC, Quicke DLJ)
Planorbis, electrotonic coupling among neurons 131:267 (Berry MS, Pentreath VW)
Platichthys, acidosis and Ca distribution in myocardial tissue 143:245 (Gesser H, Poupa O)
–, adrenaline and gill potentials 124:129 (Shuttleworth TJ)
–, cell volume regulation in heart ventricles 140:185 (Vislie T)
–, effects of copper on gill ionic regulation 149:83 (Stagg RM, Shuttleworth TJ)
–, ion regulation in gills 147:93 (Stagg RM, Shuttleworth TJ)
Platycephalus, adrenergic innervation of heart 147:85 (Donald J, Campbell G)
Platyhelminthes, carbohydrate and lipid catabolism in *Polycelis* 146:107 (Barrett J, Butterworth PE)
–, multimodal interneurons in *Alloeoplana* 147:171 (Solon MH, Koopowitz H)
Platyrhinoidis, sensory functions of cerebellum 148:399 (Tong SL, Bullock TH)
Plecotus, echolocation 122:201 (Simmons JA, O'Farrell MJ)
Pleurobranchaea, avoidance conditioning 138:157 (Davis WJ, et al)
–, chemoreception and mechanoreception 149:221, 235 (Bicker G, et al)
–, command ability in a buccal neuron 146:449, 461 (Gillette R, et al)
–, motor program switching 145:277; 147:143 (Croll RP, Davis WJ)
–, gill control 139:11 (Dickinson PS)
–, reciprocal inhibition between feeding and withdrawal behaviors 139:77 (Kovac MP, Davis WJ)
Pleuronectes, effects on cardiac contractility 131:293 (Gesser H, Poupa O)
–, electric field 141:277 (Butsuk SV, Bessonov BI)
–, starvation and enzymes 136:31 (Moon TW, Johnston IA)
Plexippus, tiered receptors in principal eyes 145:227 (Blest AD, et al)
Plotosus, ionic composition of electroreceptor 126:115 (Okitsu S, et al)
Plumage, effect of color on heat gain 126:211 (Walsberg GE, et al)
Podocnemis, postural mechanisms 131:235 (Meyer DL, et al)
Podophthalmus, driver potentials in cardiac ganglion 149:263 (Berlind A)
Poephila, brain temperature 145:89 (Bech C, Midtgård U)
Poikilotherms, temperature compensation in peripheral nervous system 142:411 (Macdonald JA)
–, temperature effect upon pH optima of enzymes 123:97 (Hazel JR, et al)
Polar bear, see *Ursus*
Polarization of skylight, orientation to – in bees 125:1 (Rossel S, et al)
– analysis in insect eyes 134:109 (Ribi WA)
– sensitivity of bee's eye 137:205 (Wehner R, Bernard GD)
– – of bee specialized photoreceptors 141:19 (Labhart T)
– – of beetle photoreceptors 142:95 (Gribakin FG)
– – of fly course control 139:177 (Wolf R, et al)
– – of fly photoreceptors 133:23 (Hardie RC, et al)
– – to UV light in flying water bugs 150:87 (Schwind R)
Polarized light detection in the bee rhabdomere 137:281 (Ribi WA)
– – sensitive photoreceptors in the fly 122:215 (Moring J, Järvilehto M)
Pollachius, exercise training in muscles 135:147 (Johnston IA, Moon TW)
–, internal dynamics of schools 144:313 (Partridge BL)
–, role of lateral line in schooling 135:315 (Partridge BL, Pitcher TJ)
Pollimyrus, behavioral responses to complex impedances 145:459 (Meyer JH)
–, electric organ discharge development 122:251; 127:45 (Westby GWM, Kirschbaum F)
–, EOD sex differences 145:399 (Westby GWM, Kirschbaum F)
Polycelis, carbohydrate and lipid catabolism 146:107 (Barrett J, Butterworth PE)
Polycera, neurons controlling gill movements 131:277 (Dickinson PS)
Polychaeta, see Annelida
Polyol metabolism in gall fly larvae 149:495 (Storey JM, Storey KB)
Polyols, role in cold-hardy beetles 140:227 (Zachariassen KE)
Polyorchis, contraction of subumbrellar swimming muscle 144:401 (Spencer AN, Satterlie RA)
–, neuromuscular synapse 148:353 (Spencer AN)
Polypeptides, neurosecretory, in crustaceans 134:303 (Andrew RD, Saleuddin ASM)
Pomatocentrus, calcium regulation of actomyosin 129:169 (Johnston IA, Walesby NJ)
Portunus, driver potentials in cardiac ganglion 149:263 (Berlind A)
–, synaptic excitation in cardiac muscle fibres 143:349 (Benson JA)
Postural mechanisms in geckos 131:235 (Meyer DL, et al)
Potamotrygon, ampullary electroreceptors 138:225 (Szamier RB, Bennett MVL)
–, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Potassium, see also K
–, ultrastructural localization in an insect ommatidium 127:245 (Burovina IV, et al)
– induced relaxation of vascular smooth muscle 135:357 (Webb RC, Bohr DF)
– mechanoreceptor current in *Stylonychia* 141:173 (Deitmer JW)
– sensitive ATPases in fly labellum 148:303 (Wieczorek H)
Potentials, graded, in locust ocellus 124:317 (Wilson M)
–, resting, action and mechanoreceptor, of *Stentor* 146:537 (Wood DC)
Prairie dog, see *Cynomys*
Predator avoidance behavior of minnow 147:371 (Webb PW)
– detection by air displacement in the cockroach 128:203 (Camhi JM, et al)
Preoptic lesions, effects on fish behavioral thermoregulation 129:193 (Nelson DO, Prosser CL)
Pressure adaptation of fish lactate dehydrogenases 129:295 (Siebenaller JF, Somero GN)
Pretectum, direction-specific neurons in frog – 140:53 (Katte O, Hoffmann K-P)
Prey, key stimuli for toads 128:189 (Borchers H-W, et al)
–, moving, effects of background structure on discrimination of – in toads 147:179 (Ewert J-P, et al)
– capture, ventilation during – in dragonfly larvae 128:341 (Weber T, Caillière L)
– – and web vibrations in spiders 148:445 (Klärner D, Barth FG)
– – behavior, tactile and visual, in frogs 142:141, 151 (Comer C, Grobstein P)
– – speed of toads in response to bombardier beetles 135:41 (Dean J)
– catching in salamanders 123:261 (Roth G); 124:49 (Himstedt W, et al)
– feature analysis, neuronal, in frogs 141:139 (Schürg-Pfeiffer E, Ewert J-P)
– – detectors in toad visual system 126:43 (Ewert J-P, et al)
– localization, role of depth vision in toad – 131:179 (Lock A, Collett T)
– – by a surface-feeding fish 140:163 (Bleckmann H); 143:485 (Bleckmann H, et al); 145:331 (Bleckmann H, Schwartz E); 149:399 (Müller U, Schwartz E)
– selection by individual experience in the toad 126:105 (Ewert J-P, Kehl W)
– – in response to moving configurational stimuli in the toad 129:207 (Beck A, Ewert J-P)
– stimuli, visual, responses in salamander tectum to – 135:251 (Himstedt W, Roth G)
Procambarus, abdominal proprioceptive reflex 122:289 (Lunteren E van)
–, central input to a mechanosensory neuron 134:1 (Marzelli GA, Wilkens LA)
–, circadian rhythm of retinal sensitivity 136:313 (Larimer JL, Smith JTF)
–, dark induced photoreceptor membrane changes 131:191 (Eguchi E, Waterman TH)
–, displacement-sensitive pathway 147:447 (Wiese K, Schultz R)

Procambarus, DNP-induced action potentials in muscle fibers 125:327 (Moody W Jr)
–, dye coupling and neuronal networks 140:121 (Glantz RM, Kirk MD)
–, effect of temperature on neuromuscular performance 143:53 (Jacobs JR, Atwood HL)
–, escape behavior 121:145 (Wine JJ, Hagiwara G), 173, 187 (Wine, JJ); 142:281 (Reichert H, et al)
–, eye muscles 121:349 (Mellon DeF Jr)
–, feedback inhibition of interneurons 149:251 (Fricke RA, et al)
–, growth of muscles 124:277 (Bittner GD, Traut DL)
–, interneurons involved in abdominal posture 148:159 (Miall RC, Larimer JL)
–, ionic dependence of screening pigment migrations 144:35 (Frixione E, Aréchiga H)
–, light-dark transformations in retinula cells 145:179 (Tsutsumi V, et al)
–, load compensation in the abdomen 123:349 (Page CH)
–, local interneurons in terminal abdominal ganglion 149:145 (Reichert H, et al)
–, long term facilitation in muscles 144:335 (Jacobs JR, Atwood HL)
–, mechanosensory integration in abdominal nervous system 148:143 (Sigvardt KA, et al)
–, motoneuron interactions in claw control 124:237 (Wiens TJ, Atwood HL)
–, motor neuron pattern formation 141:183 (Kirk MD, Glantz RM)
–, neural mechanisms of reversal of uropod steering movement 145:471 (Yoshino M, et al)
–, neural pathways of reflex-evoked behaviors 143:27 (Williams BJ, Larimer JL)
–, neuromuscular junctions 121:223 (Zucker RS, Bruner J)
–, photosensitivity of retinular cells in white-eyed- 122:273 (Kong K-L, Goldsmith TH)
–, pigment migration in retinula cells 125:91 (Olivo RF, Larsen ME)
–, polarization of statocyst receptors 130:201 (Takahata M, Hisada M)
–, quantal nature of neuromuscular transmission 136:89 (Brown RH, Newby NA)
–, reflex actions of oculomotor system 121:367 (Mellon DeF Jr, Lorton ED)
–, rhabdom degradation in white-eyed and wild-type – 148:419 (Hafner GS, et al)
–, sinus gland hormones 122:359 (Keller R)
–, statocyst afferent discharge pattern 123:1 (Ozeki M, et al)
–, statocyst control of uropod steering movements 139:243 (Yoshino M, et al)
–, statocyst interneurons 149:287, 301 (Takahata M, Hisada M)
–, vascularization of abdominal nerve cord 143:93 (Brown SK, Sherwood DN)
–, violet receptor in the eye 142:199 (Cummins D, Goldsmith TH)
Procavia, metabolic rate, water turnover and thermoregulation 138:315 (Rübsamen K, Kettembeil S)
–, nitrogen metabolism and urea kinetics 138:307 (Hume ID, et al)
–, water and energy metabolism 131:303 (Rübsamen K, et al)
Prolactin regulation in salmon 140:217 (Brewer KJ, McKeown BA)
–, role in tilapia intestinal absorption 146:1 (Mainoya JR)
Propionate acid formation in lugworm mitochondria 138:35 (Schroff G, Zebe E)
Proprioception, antennal, in rock lobster 145:505 (Rossi-Durand C, Vedel JP)
Proprioceptive feedback, patterning of fly motor output by – 134:177 (Heide G)
– function of locust chordotonal organ 147:389 (Hustert R)
– gating of inhibitory pathways in locust motoneurons 146:507 (Steeves JD, Pearson KG)
– influence, convergence on locust coxal motoneurons 150:77 (Hustert R)
– inputs in lobster walking legs 130:251 (Vedel JP, Clarac F)
– – in locust flight motor 128:57 (Möhl B, Nachtigall W)
Proprioceptor reflex, abdominal, in *Procambarus* 122:289 (Lunteren E van)
Proprioceptors in *Balanus* cirri 123:229 (Clark JV, Dorsett DA)
Prosternal organ, role in fly positional head reflexes 126:137 (Horn E, Lang H-G)
Protective reflex of a bryozoan 137:297 (Wiese K, et al)
Protein, periostracin in *Mytilus* 130:301 (Waite JH, et al)
–, luciferin-binding, in *Gonyaulax* 128:251 (Sulzman FM, et al)
–, thermal hysteresis producing, from the milkweed bug 142:539 (Patterson JL, et al)
– content during starvation in a snail 123:149 (Streit B)
– synthesis inhibitors, effects on *Gonyaulax* circadian clock 138:1 (Dunlap JC, et al), 9 (Rensing L, et al)
Proteins, receptor –, for fly sweet taste 141:265 (Tanimura T, Shimada I)
Protocerebrum, visual interneurons in bee – 121:65 (Erber J, Menzel R)
Protophormia, effect of sugars on water receptor 126:131 (Wieczorek H, Köppl R)
–, potassium sensitive ATPases in labellum 148:303 (Wieczorek H)
–, sugar reception by water receptor 138:167 (Wieczorek H)
–, sugar receptors 149:207 (Wieczorek H, Köppl R)
–, tryptophan 2,3-dioxygenase 124:117 (Schartau W)
Protozoa, action potential and bioluminescence in *Noctiluca* 134:137 (Nawata T, Sibaoka T)
–, amino acid uptake and incorporation in *Tetrahymena* 140:267 (Wheatley DN, Walker E)
–, bioluminscence in *Pyrocystis* 143:43; 145:517 (Widder EA, Case JF)
–, chemotaxis of *Paramecium* 127:167 (Van Houten J)
–, ciliary reversal in *Paramecium* 127:39 (Hildebrand E)
–, *Gonyaulax* glow rhythm 130:355 (Taylor W, et al), 359 (Taylor W, Hastings JW); 138:19 (Krasnow R, et al); 148:11 (Taylor W, et al)
–, K^+ mechanoreceptor current in *Stylonychia* 141:173 (Deitmer JW)
–, luciferin binding protein in *Gonyaulax* 128:251 (Sulzman FM, et al)
–, mechanoreceptor channels in *Paramecium* 135:233 (Ogura A, Machemer H)
–, mechanoreceptor potentials in *Stylonychia* 127:255 (Peyer JE de, Machemer H)
–, membrane excitability in *Stylonychia* 121:15 (Peyer JE de, Machemer H)
–, membrane permeabilities and mechanoreceptor potentials in *Stentor* 146:537 (Wood DC)
–, Na-independent uptake of nutrients in *Tetrahymena* 125:97 (Rasmussen L, et al)
–, protein synthesis inhibitors and *Gonyaulax* circadian clock 138:1 (Dunlap JC, et al), 9 (Rensing L, et al)
–, voltage-dependent ciliary activation in *Stylonychia* 150:223 (Peyer JE de, Machemer H)
Psammomys, gustatory responses to methyl glycosides 141:297 (Jakinovich W, et al)
Pseudemys, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, bipolar cells in retina 144:459 (Weiler R)
–, central program of scratch reflex 140:287 (Stein PSG, Grossman ML)
–, extraocular photoreception of pineal gland 140:173 (Meissl H, Ueck M)
–, interlimb coordination in a spinal preparation 124:203 (Stein PSG)
–, lung ventilation 126:203 (Burggren WW, et al)
–, motor neuron synaptic potentials during scratch reflex 146:401 (Stein PSG, et al)
–, multicyclic scratch reflex movements 145:477 (Bakker JGM, Crowe A)
–, reflex movements in hind limbs 125:351; 130:241 (Valk-Fai T, Crowe A)
Pseudopleuronectes, Mauthner cell 143:541 (Zottoli SJ)
–, optics of the eye 146:345 (Sivak JG)
–, sodium cotransport systems 135:175 (Eveloff J, et al)
Pteronotus, multiple specialisations in auditory periphery 131:255 (Pollak G, et al)
–, orientation signals during avoidance maneuvers 148:389 (Jen PHS, Kamada T)
Pteroptyx, control of flashing 144:277, 287 (Buck J, et al)
Ptiloerection as cold defense response in pigeons 136:77 (Hohtola E, et al)

Pulmonary diffusing capacity in lizards 142:509 (Glass ML, et al)
– response to CO_2 exposure in frogs 129:339 (Jackson DC, Braun BA)
Pulmonata, see *Ancylus*
Pumping, rhythmic, in *Balanus* 130:183 (Clark JV)
Pupil, spectral effects of – in fly photoreceptors 146:145 (Vogt K, et al)
– mechanisms in insect eyes 129:199 (Stavenga DG, et al)
Purine nucleotide cycle in *Helix* hepatopancreas 129:137 (Campbell JW, Vorhaben JE)
Purkinje shift, reverse, in dragonfly ocellar neurons 144:91 (Mobbs PG, et al)
Pygoscelis, swimming under water 137:17 (Nachtigall W, Bilo D)
Pyloric caeca composition in starfish during reproduction 148:49 (Plas JA van der, Voogt PA)
– neurons in crab stomatogastric ganglion 130:221, 229 (Hermann A)
– rhythm in the lobster 143:453 (Robertson RM, Moulins M)
– system, *Panulirus* stomatogastric ganglion 122:227 (Mulloney B)
Pyridine receptors in crayfish walking leg 148:221 (Hatt H, Bauer U)
Pyrocystis, bioluminescent flash forms 143:43 (Widder EA, Case JF)
–, microsource activity in bioluminescence 145:517 (Widder EA, Case JF)
Pyruvate carboxylase from trout liver 143:281 (Suarez RK, Hochachka PW)
– kinase function in tuna hot and cold organs 129:185 (Guppy M, Hochachka PW)
– –, role in *Tubifex* anaerobic energy metabolism 130:337 (Hoffmann KH, et al)
– metabolism of trout liver mitochondria 143:275 (Suarez RK, Hochachka PW)
Python, see also *Morelia*
–, lung compliance 138:321 (Perry SF, Duncker H-R)

Q

Quail, see *Coturnix*

R

Rabbit, absorption in caecal pouch 133:205 (Leng-Peschlow E, Marty J)
–, cardiac output and blood flow in lactating – 138:31 (Jones CS, Parker DS)
–, cervical-ocular and optokinetic interaction 134:11 (Denia A, et al)
–, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
–, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
–, temperature effect on red cell sodium pump 138:43 (Willis JS, et al)
Raja, ampullae of Lorenzini in the magnetic field 126:333 (Brown HR, Ilyinsky OB)
–, composition of inner ear lymph 126:1 (Peterson SK, et al)
Rana, acoustic signals and hormone production 140:25 (Brzoska J, Obert H-J)
–, activity metabolism 129:309 (Hillman SS, et al)
–, auditory and vestibular receptors in labyrinth 133:141 (Caston J, Gribenski A)
–, blood oxygen dissociation curve 129:111 (Tazawa H, et al)
–, bradycardia recovering 133:193 (Lillo RS)
–, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, Ca distribution and transport in myelinated nerve 141:319 (Diecke FPJ, Stout MA)
–, cardiovascular effects of parathyroid hormone 147:101 (Strickland ML, et al)
–, coding of auditory signals in torus semicircularis 138:131 (Walkowiak W)
–, direction specific neurons in pretectum 140:53 (Katte O, Hoffmann K-P)
–, directionality of torus semicircularis neurons 144:419 (Feng AS)
–, extraretinal photoreceptors 130:277 (Hartwig HG, Veen T van)
–, feedback loop in vestibular system 133:63 (Caston J, Gribenski A)
–, frequency representation in medulla 143:339 (Fuzessery ZM, Feng AS)
–, frequency selectivity of the medulla 150:107 (Fuzessery ZM, Feng AS)
–, frequency selectivity in midbrain 146:471 (Fuzessery ZM, Feng AS)
–, intrapulmonary receptors 132:69 (Kuhlmann WD, Fedde MR)
–, mating call selectivity in thalamus and midbrain 150:333 (Fuzessery ZM, Feng AS)
–, mechanoreceptors in embryonal head skin 135:341 (Roberts A)
–, neural correlates of calling 126:49 (Schmidt RS)
–, neuronal responses in vestibular nerve to auditory inputs 147:305 (Bricout-Berthout A, Caston J)
–, neurons involved in Gestalt prey feature analysis 141:139 (Schürg-Pfeiffer E, Ewert J-P)
–, nictitating membrane 125:335 (Sivak JG, et al)
–, organization of sensory inputs to midbrain 142:161 (Comer C, Grobstein P)
–, phospholipids from washings of lungs 139:117 (Vergara GA, Hughes GM)
–, pituitary hormones and responses of acoustic anterior preoptic neurons 141:163 (Urano A, Gorbman A)
–, respiratory control 129:339 (Jackson DC, Braun BA)
–, tactile and visual prey capture behavior 142:141, 151 (Comer C, Grobstein P)
–, temperature effects on auditory thresholds 130:17 (Hubl L, Schneider H)
–, temperature effects on heart 132:313 (Stene-Larsen G, Helle KB)
–, tonotopic organization of amphibian papilla 145:437 (Lewis ER, et al)
–, training effects 134:345 (Cummings JW)
–, urea production 134:359 (Johnston JW, Jungreis AM)
Rapana, electrogenic sodium pump in radular muscle cells 132:141 (Kobayashi M, Ando M)
Rat, acidosis and Ca distribution in myocardial tissue 143:245 (Gesser H, Poupa O)
–, antidiuretic effects of fish urophysial extracts 135:183 (Ichikawa T)
–, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, calcium movements in smooth muscle 126:233 (Huddart H, Saad KHM)
–, circadian pacemaker in suprachiasmatic nucleus 146:153 (Inouye ST, Kawamura H)
–, circadian rhythm of sleep and activity 128:37 (Borbély AA, Neuhaus HU)
–, effects of sleep-deprivation 133:71 (Borbély AA, Neuhaus HU)
–, effects of photoperiods on sleep, motor activity and feeding 124:1 (Borbély AA, Neuhaus HU)
–, energy metabolism of skeletal muscle 142:465 (Nicol CJM, Johnston IA)
–, entrainment to periodic feeding 143:401 (Stephan FK)
–, mechanics and structure of lung 138:321 (Perry SF, Duncker H-R)
–, muscle propertics 126:263 (Melichna J, et al)
–, neural and behavioral changes by exposure to an odor 124:259 (Laing DG, Panhuber H)
–, oxygen consumption by skeletal muscle 128:185 (Grubb B, Folk GE Jr)
–, pacemaker driving N-acetyltransferase activity in pineal gland 145:539 (Illnerová H, Vaněček J)
–, potassium relaxation of smooth muscle 135:357 (Webb RC, Bohr DF)
–, splitting of circadian rhythms 134:75 (Boulos Z, Terman M)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
–, visual properties of suprachiasmatic neurones 135:349 (Groos GA, Mason R)
Ray, see *Platyrhinoidis, Potamotrygon*
Receptor proteins for fly sweet taste 141:265 (Tanimura T, Shimada I)
Rectal gland, cAMP stimulation of secretion in dogfish 140:209 (Shuttleworth TJ, Thompson JL)
– –, oxygen consumption in dogfish – 136:39 (Shuttleworth TJ, Thompson JL)
Redpoll, see *Carduelis*
Reflex, abdominal proprioceptor –, in *Procambarus* 122:289 (Lunteren E van)
–, cervical-ocular and optokinetic, in rabbits 134:11 (Denia A, et al)
–, protective, of a bryozoan 137:297 (Wiese K, et al)

Reflex, scratch – 140:287 (Stein PSG, Grossman ML); 142:227 (Randall W); 145:477 (Bakker JGM, Crowe A); 146:401 (Stein PSG, et al)
– actions of *Procambarus* oculomotor system 121:367 (Mellon DeF Jr, Lorton ED)
– behaviour of the stick insect 143:81 (Graham D, Wendler G)
– -evoked behaviors, neural pathways in crayfish 143:27 (Williams BJ, Larimer JL)
– motor control, dual, of crab muscle receptor 148:365 (Cannone A, Bush BMH)
– movements, antennal, in spiny lobster 147:259 (Neil DM, et al), 269 (Barnes WJP, Neil DM)
– –, cerebellar action on – in dogfish 134:69 (Paul DH, Roberts BL)
– – in terrapin hind limbs 125:351; 130:241 (Valk-Fai T, Crowe A)
Refractive significance of nictitating membranes 125:335 (Sivak JG, et al)
Regenerating shrimp muscle, synaptic physiology 134:17 (Stephens PJ, Mellon DeF Jr)
Regeneration in cricket cercal system 149:277 (Dagan D, et al)
Relaxation of vascular smooth muscle, potassium induced 135:357 (Webb RC, Bohr DF)
Renal clearance of phosphate and calcium in a freshwater turtle 141:463 (Lavery G, Clark NB)
– function, control in salamander larvae 149:91 (Stiffler DF, et al)
Reproduction, atrial gland and egg-laying in *Aplysia* 128:67; 141:131 (Arch S, et al)
–, brain-implant stimulation of slug – 143:311 (McCrone EJ, et al)
–, circadian periodicity and gonadal growth in buntings 144:201 (Tewary PD, Kumar V)
–, day length and endogenous control in ground squirrels 130:131 (Kenagy GJ, Bartholomew GA)
–, effect of pinealectomy on mouse – 144:145 (Glass JD, Lynch GR)
–, endogenous annual rhythm of – in ground squirrels 142:251 (Kenagy GJ)
–, endogenous control of chipmunk annual rhythms 141:369 (Kenagy GJ)
–, interrelation with hibernation rhythm in a ground squirrel 135:333 (Kenagy GJ)
–, photoperiodic control of lizard – 146:485 (Underwood H, Hall D)
–, photoperiodic control of slug maturation 125:317 (Sokolove PG, McCrone EJ)
–, photoperiodic control of snail – 142:89 (Bailey SEF)
–, pyloric caeca composition in starfish during – 148:49 (Plas AJ van der, Voogt PA)
–, steroid synthesizing capacity of starfish ovaries 138:27 (Schoenmakers HJN)
Reptilia, aerobic metabolism of *Varanus* 127:331 (Wood SC, et al)
–, arginine metabolism in *Calotes* 140:261 (Baby TG, Reddy SRR)
–, auditory fibre activity in *Gekko* 142:203 (Eatock RA, et al), 219 (Eatock RA, Manley GA)
–, bipolar cells in *Pseudemys* retina 144:459 (Weiler R)
–, Ca and acidosis of myocardium in *Pseudemys* and *Vipera* 127:307 (Gesser H, Poupa O)
–, circadian organization of *Alligator* 139:287 (Kavaliers M, Ralph CL)
–, circadian organization in *Sceloporus* 141:537 (Underwood H)
–, colour changes and thermoregulation in *Amphibolorus* 135:139 (Rice GE, Bradshaw SD)
–, diurnal ventilatory patterns in *Thamnophis* 149:503 (Hicks JW, Riedesel ML)
–, evolution of lung compliance 138:321 (Perry SF, Duncker H-R)
–, extraretinal photoreception in *Alligator* 136:243 (Kavaliers M)
–, extraretinal photoreception in *Lacerta* 130:277 (Hartwig HG, Veen T van)
–, fetal-maternal shift of blood oxygen affinity in *Sphenomorphus* 142:495 (Grigg GC, Harlow P)
–, hypoxic and hypercapnic responses in *Natrix* 129:105 (Gratz RK)
–, inner ear lymph of *Gerrhonotus* 126:1 (Peterson SK, et al)
–, interlimb coordination in a spinal *Pseudemys* 124:203 (Stein PSG)
–, intestinal Na-transport in *Testudo* 129:355 (Gilles-Baillien M, et al)
–, iodine metabolism in *Elaphe* 131:297 (Wong CC, Chiu KW)
–, lactate and glycogen metabolism in *Sceloporus* 147:79 (Gleeson TT)
–, lingual salt glands in Crocodilia 149:43 (Taplin LE, et al)
–, lung ventilation in chelonians 126:203 (Burggren WW, et al)
–, melatonin affects circadian rhythmicity in *Sceloporus* 130:317 (Underwood H)
–, metabolic adaptation in *Natrix* 142:489 (Davies PMC, Bennett EL)
–, metabolic capacities of trained and captive *Sceloporus* 129:123 (Gleeson TT)
–, middle ear sensitivity in *Chrysemis* 127:97 (Moffat AJM, Capranica RR)
–, oxygen consumption in *Amblyrhynchus* 132:285 (Bartholomew GA, Vleck D); 141:531 (Vleck D, et al)
–, peripheral circulation in *Alligator* 148:57 (Weinheimer CJ, et al)
–, photoperiodic control of *Anolis* reproduction 146:485 (Underwood H, Hall D)
–, photoperiodic time measurement in *Anolis* 125:143 (Underwood H)
–, photoreception of *Pseudemys* pineal gland 140:173 (Meissl H, Ueck M)
–, postural mechanisms in geckos 131:235 (Meyer DL, et al)
–, pulmonary diffusing capacity in *Varanus* and *Tupinambis* 142:509 (Glass ML, et al)
–, reflex movements in *Pseudemys* hind limbs 125:351; 130:241 (Valk-Fai T, Crowe A)
–, renal clearance in *Chrysemys* 141:463 (Laverty G, Clark NB)
–, respiration in *Morelia* 122:403 (Donelly P, Woolcock AJ)
–, respiration of *Natrix* 127:299 (Gratz RK)
–, respiratory and cardiovascular physiology of *Acrochordus* 144:215 (Seymour RS, et al)
–, respiratory and cutaneous water loss in *Lepidophyma* and *Xanthusia* 149:25 (Mautz WJ)
–, respiratory responses to temperature in *Terrapene* 131:353 (Glass ML, et al)
–, salt loading and salt gland function in *Malaclemys* 145:101 (Cowan FBM)
–, scratch reflex in *Pseudemys* 140:287 (Stein PSG, Grossman ML); 145:477 (Bakker JGM, Crowe A); 146:401 (Stein PSG, et al)
–, thermal acclimation of O_2-Hb binding in *Vipera* 130:293 (Johansen K, Lykkeboe G)
–, thermal effects on *Iguana* spinal motoneurons 139:251 (Görke K)
–, thermal effects on lizard muscles 147:11 (Putnam RW, Bennett AF)
–, ventilation during exercise in *Chelonia* 134:315 (Jackson DC, Prange HD)
–, ventilation and perfusion in *Pelamis* lung 145:109 (Seymour RS, et al)
–, visual pigments of *Gekko* 138:121 (Crescitelli F)
–, water and electrolyte balance in *Uromastix* 146:81 (Lemire M, et al)
–, water and electrolyte homeostasis in *Crocodylus* 144:261 (Grigg GC)
Resistance adaptation in goldfish 129:241 (Hoyland J, et al)
– reaction in lobster legs 129:217 (Neil DM, et al)
Respiration, air breathing fish 122:295 (Graham JB, et al)
–, arterial chemoreceptors and adjustments to hypoxia in ducks 133:177 (Bouverot P, et al)
–, blood properties of carp during diurnal variation in ambient oxygen tension 128:117 (Lykkeboe G, Weber RE)
–, bradycardia recovering in bullfrogs 133:193 (Lillo RS)
–, control of breathing in ducks during exercise 147:107 (Kiley JP, et al)
–, coordination of heart and gill rhythms in *Limulus* 124:267 (Watson WH III, Wyse GA)
– in crabs at high temperatures 130:309 (Taylor EW, Wheatly MG)
–, cutaneous versus pulmonary response to CO_2 exposure in frogs 129:339 (Jackson DC, Braun BA)
–, diurnal ventilatory patterns in garter snake 149:503 (Hicks JW, Riedesel ML)

Respiration, ventilatory responses of burrowing owl and bobwhite to hypercarbia and hypoxia 149:527 (Boggs DF, Kilgore DL Jr)
– during running in ant workers 137:151 (Jensen TF, Holm-Jensen I)
– during starvation in a shrimp 141:549 (Regnault M)
–, effect of adrenaline on isolated trout gills 124:129 (Shuttleworth TJ)
–, effect on toad blood pressure and heart rate 143:223 (Segura ET, et al)
–, gas transport by shrimp hemocyanin 145:21 (Weber RE, Hagerman L)
–, hemoglobin and gas bubble function in a backswimmer 142:515 (Wells RMC, et al)
–, hemoglobin-oxygen affinity of mouse embryonic erythrocytes 129:333 (Wells RMG)
–, hypoxic responses in trout gill secondary lamellae 145:37 (Soivio A, Tuurala H)
–, increases in shark arterial blood oxygen during exercise 147:41 (Bushnell PG)
–, lung ventilation in turtles 126:203 (Burggren WW, et al)
–, oxygen affinities of seaperch fetal and maternal blood 142:523; 144:253 (Ingermann RL, Terwilliger RC)
–, oxygen consumption and blood gases in hypoxic octopus 148:35 (Houlihan DF, et al)
–, oxygen consumption in cockroach rectum 138:347 (Tolman JH, Steele JE)
–, oxygen transport in blood 123:105 (Angersbach D, Decker H), 113 (Angersbach D)
– in a parrot 142:479 (Bucher TL)
–, phospholipids in frog lungs 139:117 (Vergara GA, Hughes GM)
–, pulmonary diffusing capacity in lizards 142:509 (Glass ML, et al)
–, rapid changes in trout blood acid-base status 148:123 (Thomas S, Le Ruz H)
–, responses of crabs to hypoxia 122:391 (Taylor FW, et al)
–, responses to long-term temperature exposure in a turtle 131:353 (Glass ML, et al)
– in a salamander 144:241 (Burggren WW, Wood SC)
– in a sea snake 145:109 (Seymour RS, et al)
– in the Tasmanian devil 140:241 (Nicol SC, Maskrey M)
–, ventilation and gas exchange in the python 122:403 (Donelly P, Woolcock AJ)
–, ventilation and gas exchange in water snake 127:299 (Gratz RK)
–, ventilation and oxygen uptake in polychaetes 145:45 (Kristensen E)
–, ventilatory responses of *Natrix* to hypoxia and hypercapnia 129:105 (Gratz RK)
–, aquatic and aerial, in *Carcinus* 127:315 (Taylor EW, Butler PJ)
Respiratory adaptation of carp blood 128:127 (Weber RE, Lykkeboe G)
– bypass, effect on pigeon brain temperature 129:115 (Bernstein MH, et al)
– characteristics of resting marsupials 145:95 (Dawson TJ, Needham AD)
– evaporation in panting fowl 145:63 (Brackenbury J, et al)
– gas exchange in crayfish submerged in normoxic water and exposed in air 138:67 (Taylor EW, Wheatly MG)
– – – in the dogfish 132:289 (Short S, et al)
– – – in a treefrog 136:71 (Johansen K, et al)
– neuron activity in carp brain 133:131 (Ballintijn CM, et al)
– physiology of an aquatic snake 144:215 (Seymour RS, et al)
– properties of seal blood 149:49 (Lapennas GN, Reeves RB)
– – of trout blood 145:117 (Tetens V, Lykkeboe G)
– regulation of trout during transfer to seawater 134:351 (Bath RN, Eddy FB)
– water loss in lizards 149:25 (Mautz WJ)
Rete mirabile ophthalmicum, role in bird brain temperature 129:119 (Kilgore DL, et al); 145:89 (Bech C, Midtgård U)
Retina, duplex system in slug – 133:125 (Suzuki H, et al)
–, N-acetyltransferase in chick – 139:103; 140:181 (Binkley S, et al)
–, single electrode studies on butterfly – 150:271 (Horridge GA, et al)
–, spatial integration of signals in fly – 146:321 (Dubs A)
Retinal acid phosphatase in a crab 149:353 (Couet HG de, Blest AD)
– ganglion cell responses during eye closure in the toad 125:301 (Borchers H-W, Ewert J-P)
– – cells, sensitive to direction of movement of configurational stimuli in the toad 129:211 (Ewert J-P, et al)
– glycogen turnover in honeybee drone 150:69 (Evêquoz V, et al)
– responses in *Nautilus* 134:281 (Lange GD, et al)
– substrate for crab colour discrimination 133:159 (Leggett LMW)
Retinula cell, see photoreceptor
Retzius cell, calcium depletion depolarizations in membrane of leech – 150:499 (Yang J, Lent CM)
Rhabdom, fused, colour receptors in an insect – 123:239 (Schlecht P, et al)
– degradation in white-eyed and wild-type crayfish 148:419 (Hafner GS, et al)
– synthesis in crab isolated eyestalks and retinae 148:313 (Stowe S)
– –, effect of light on – in a crab 142:19 (Stowe S)
Rhabdomeres, twisted, in bee eyes 142:1 (Wehner R, Meyer E)
–, twisted, in fly eyes 133:291 (Smola U, Tscharntke H); 142:43 (Smola U, Wunderer H)
–, non-twisted, in fly and bee eyes 134:109 (Ribi WA)
Rhabdomys, heat production 148:77 (Haim A)
Rhinobatus, urea-requiring lactate dehydrogenases 125:135 (Yancey PH, Somero GN)
Rhinolophus, acoustic fovea 132:47 (Schuller G, Pollak G)
–, effect of vocalization on auditory processing 132:39 (Schuller G)
–, hearing and Doppler-shift compensation 139:349 (Schuller G)
–, inferior colliculus neurons 125:217 (Möller J, et al), 227 (Möller J); 141:249 (Vater M); 146:423 (Jen PHS, Suthers RA)
–, laryngeal nerve activity during pulse emission 143:317 (Schuller G, Rübsamen R), 323 (Rübsamen R, Schuller G)
–, single unit responses in cochlear nucleus 149:369 (Vater M)
Rhinophores, light sensitivity of *Aplysia* – 136:257 (Jacklet JW)
Rhinopoma, adaptive echolocation sounds 144:559 (Habersetzer J)
Rhipicephalus, responses of olfactory sensilla to sex pheromones 148:411 (Waladde SM)
Rhithropanopeus, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
Rhodnius, circadian control of ecdysis 147:281 (Ampleford EJ, Steel CGH)
Rhodopsins in moth developing pupal eye 150:153 (White RH, et al)
Rhombosolea, adrenergic heart innervation 147:85 (Donald J, Campbell G)
Rhynchotragus, effect of dehydration on intestinal electrolyte concentration 135:165 (Skadhauge E, et al)
Rhythmicity, see also photoperiod
–, aldehydes phase shift *Gonyaulax* clock 130:359 (Taylor W, Hastings JW)
–, anisomycin pulses drive *Gonyaulax* circadian oscillator towards singularity 148:11 (Taylor W, et al)
–, circadian control of insect ecdysis 147:281 (Ampleford FJ, Steel CGH)
–, circadian organization in alligators lacking a pineal organ 139:287 (Kavaliers M, Ralph CL)
–, circadian organization in *Aplysia* 131:169 (Lickey ME, Wozniak JA)
–, circadian pacemaker in rat SCN 146:153 (Inouye ST, Kawamura H)
–, circadian pacemaker in sea hare eye 142:403 (Block GD, Roberts MH)
–, circadian periodicity in a cockroach altered by high frequency light-dark cycles 146:255 (Roberts SK)
–, circadian periodicity and initiation of gonadal growth in buntings 144:201 (Tewary PD, Kumar V)
–, circadian phase response curves for dark pulses in hamster 146:411 (Boulos Z, Rusak B)
–, circadian rhythm of crayfish retinal sensitivity 136:313 (Larimer JL, Smith JTE)
–, circadian rhythm in *Drosophila* salivary glands 143:229 (Weitzel G, Rensing L)

Rhythmicity, circadian rhythm of *Gonyaulax* luciferin binding protein 128:251 (Sulzman FM, et al)
–, circadian rhythm of moth visual sensitivity 150:165 (Bennett RR)
–, circadian rhythm of rat sleep and activity during various lighting scedules 128:37 (Borbély AA, Neuhaus HU)
–, circadian rhythms in blind mice 149:333 (Scheuch GC, et al)
–, circadian rhythms of N-acetyltransferase in chick retina 139:103 (Binkley S, et al)
–, circadian spontaneous glow and flashing of *Gonyaulax* 138:19 (Krasnow R, et al)
–, circadian variations in blood counts of mice 149:307 (Bennett MF, Pomeroy GC)
–, circannual cycles in ground squirrels 136:349, 355 (Mrosovsky N); 150:233 (Joy JE, Mrosovsky N)
–, circannual rhythms in starlings stop under long photoperiods 146:419 (Gwinner E, Wozniak J)
–, control of flashing in fireflies 144:277, 287 (Buck J, et al)
–, development of mouse circadian pacemaker 143:527 (Davis FC, Menaker M)
–, different oscillators in *Drosophila* 127:229 (Engelmann W, Mack J)
–, diurnal changes in crab photoreceptor angular sensitivity 144:99 (Leggett LMW, Stavenga DG)
–, diurnal variations in snail physiological activities 125:59 (Rajarami Reddy G, et al)
–, diurnal ventilatory patterns in garter snakes 149:503 (Hicks JW, Riedesel ML)
–, diversity of insect photoperiodic clocks 127:197 (Saunders DS)
–, effect of brief light pulses on hamster photoperiodic reaction 148:529 (Hoffmann K)
–, effect of ethanol on *Gonyaulax* glow rhythm 130:355 (Taylor W, et al)
–, effect of melatonin on lizard circadian – 130:317 (Underwood H)
–, effects of photoperiods on activity patterns in the rat 124:1 (Borbély AA, Neuhaus HU)
–, effects of pinealectomy on ground squirrel annual cycles 146:501 (Phillips JA, Harlow HJ)
–, effect of pinealectomy on starling circannual testicular rhythm 136:345 (Gwinner E, Dittami J)
–, effects of pinealectomy on starling locomotor activity 126:123 (Gwinner E)
–, effects of pinealectomy on white sucker thermoregulation rhythms 146:235 (Kavaliers M)
–, effects of pinealectomy, blinding and melatonin on lizard circadian organization 141:537 (Underwood H)
–, effects of protein synthesis inhibitors on *Gonyaulax* clock 138:1 (Dunlap JC, et al), 9 (Rensing L, et al)
–, effects of sleep-deprivation in the rat 133:71 (Borbély AA, Neuhaus HU)
–, effects of ultra-short photoperiod on fly seasonal clock 145:421 (Saunders DS)
–, endogenous annual rhythms in chipmunks 141:369 (Kenagy GJ)
–, endogenous annual rhythms in *Spermophilus* 135:333 (Kenagy GJ)
–, endogenous control of ground squirrel reproductive cycle 130:131 (Kenagy GJ, Bartholomew GA); 142:251 (Kenagy GJ)
–, endogenous cycle of oxygen consumption in *Galago* 126:241 (Perret M)
–, entrainment of sparrow circadian system 146:245 (Takahashi JS, Menaker M)
–, expression of bilaterally paired oscillators in cricket circadian rhythm 150:51 (Wiedenmann G)
–, genetic analysis of mouse circadian rhythms 139:121 (Possidente B, Hegmann JP)
–, homeostasis of hamster circadian periodicity 123:265 (Fitzgerald K, et al)
–, infradian cycles in dormice 137:315 (Mrosovsky N, et al)
–, interactions in cockroach circadian system 124:225 (Page TL)
–, isolation of an insect circadian clock 149:311 (Fleissner G)
–, limits of entrainment to periodic feeding in suprachiasmatic lesioned rats 143:401 (Stephan FK)
–, magnet effect in lobster neuronal oscillators 129:5 (Ayers JL Jr, Selverston AI)
–, N-acetyltransferase activity in chick retina and pineal gland 139:103; 140:181 (Binkley S, et al)
–, neuronal basis of pumping in *Balanus* 130:183 (Clark JV)
–, one circadian pacemaker controlls double-peaked activity rhythm in cockroaches 137:249 (Wiedenmann G)
–, oscillatory command input to crustacean motor pattern generators 143:453 (Robertson RM, Moulins M)
–, overt circadian – in Japanese quail 145:391 (Simpson SM, Follett BK)
–, phase resetting of mosquito circadian oscillator 138:201 (Peterson EL)
–, photoperiod and locomotor activity in male golden hamster 132:277 (Ellis GB, Turek FW)
–, photoperiodic control of a complex seasonal rhythm 142:227 (Randall W)
–, photoperiodic control of lizard reproduction 146:485 (Underwood H, Hall D)
–, photoperiodic control of slug reproductive maturation 125:317 (Sokolove PG, McCrone EJ)
–, photoperiodic control of snail annual activity and reproduction 142:89 (Bailey SFR)
–, photoperiodic induction of fleshfly diapause 124:75; 132:179 (Saunders DS)
–, photoperiodic time measurement in Japanese quail 145:381 (Simpson SM, Follett BK)
–, photoperiodic time measurement in a lizard 125:143 (Underwood H)
–, photoperiodic time measurement in spider mites 134:203, 219 (Vaz Nunez M, Veerman A)
–, photosensitivity of a mutant circadian clock 122:87 (Winfree AT, Gordon H)
–, pineal gland and entrainment of sparrow activity rhythm 134:339 (Laitman RS, Turek FW)
–, pineal and hypothalamic pacemakers in Japanese quail 144:381 (Simpson SM, Follett BK)
–, post-embryonic development of cricket circadian rhythm 147:299 (Tomioka K, Chiba Y)
–, pulses of darkness shift phase of bat circadian rhythm 127:239 (Subbaraj R, Chandrashekaran MK)
–, role of pineal organ and SCN in control of sparrow circadian locomotion 141:207 (Ebihara S, Kawamura H)
–, seasonal changes in sparrow blood composition 129:151 (deGraw WA, et al)
–, seasonal control of hamster energy requirements 142:429 (Heldmaier G, Steinlechner S)
–, seasonal differences and effect of pinealectomy on burbot circadian rhythms 136:215 (Kavaliers M)
–, seasonality of circadian rhythms in diurnal and nocturnal rodents 128:21 (Kenagy GJ)
–, self-sustaining circadian rhythms in finches 139:49; 140:113 (Wever RA)
–, short-term feeding rhythms in a vole 127:215 (Daan S, Slopsema S)
–, splitting of hamster circadian activity 145:405 (Earnest DJ, Turek FW)
–, splitting of rat circadian rhythms 134:75 (Boulos Z, Terman M)
–, strain difference in glyceraldehyde-3-phosphate dehydrogenase activity rhythm in mice 148:137 (Peleg L, et al)
–, survival of flies in non-24-hour light-dark cycles 127:191 (Saint Paul U von, Aschoff J)
–, synchronization of a circadian rhythm by melatonin 127:209 (Gwinner E, Benzinger I)
–, tidal rhythms of amphipod phototaxis 135:243 (Forward RB Jr)
–, tonic effect of light on squirrel monkey circadian system 129:43 (Sulzman FM, et al)
–, transplantation of a time-signal in the bee 124:193 (Martin U, et al)
–, two-oscillator pacemaker controlling N-acetyltransferase rnythm in rat pineal gland 145:539 (Illnerová H, Vaněček J)
Righting in a beetle 136:279 (Frantsevich LI, Mokrushov PA)
Riparia, development of heat production 149:99 (Marsh RL, Wickler SJ)
Roach, see *Rutilus*
Rock hyrax, see *Procavia*
Rocking, control in a phasmid 132:209 (Bässler U, Pflüger HJ)

Root shift, reversed, in gastropod hemocyanin 129:97 (Brix O, et al)
Rotations, 3-dimensional, transducer for recording – 126:161 (Zarnack W)
Rousettus, audiogram and masked thresholds 136:227 (Suthers RA, Summers CA)
–, brainstem auditory responses 146:283 (Belknap DB, Suthers RA)
Rowing in *Gerris* 123:43, 51 (Bowdan F)
Running, energetic costs of – in ant workers 137:151 (Jensen TF, Holm-Jensen I)
Ruspolia, biophysics of the ear 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al)
–, mechanical time resolution in the ear 143:297 (Larsen ON)
Rutilus, crystalline lens 121:135 (Srozyński S)

S

Saimiri, effect of laryngeal nerve transection on calls 123:23 (Jürgens U, et al)
–, tonic effect of light on circadian system 129:43 (Sulzman FM, et al)
Saithe, see *Pollachius*
Salamander, see *Ambystoma, Amphiuma, Aneides, Batrachoseps, Desmognathus, Ensatina, Eurycea, Hydromantes, Salamandra*
Salamandra, responses to stationary visual patterns 124:49 (Himstedt W, et al)
–, salinity tolerance and osmoregulation 145:133 (Degani G)
–, tectal responses to prey stimuli 135:251 (Himstedt W, Roth G)
Salinity, effect on direct current electric field in teleosts 141:277 (Butsuk SV, Bessonov BI)
–, effects of changes in external – on trout osmotic adaptation 144:175 (Learay C, et al)
–, reduced, effect on membrane structure of molluscan red blood cells 138:299 (Amende LM, Pierce SK)
– stress, effect on mollusc red blood cells 138:283 (Amende LM, Pierce SK)
– –, effects on bivalve neurons 144:165 (Beres LS, Pierce SK)
– tolerance in salamanders 145:133 (Degani G)
Salivary glands, cellular circadian rhythm in *Drosophila* – 143:229 (Weitzel G, Rensing L)
Salmo, acid-base regulation in blood plasma 140:249 (Thomas S, et al)
–, adenosine effects on gills 130:325 (Colin DA, et al)
–, atrial adrenoceptors 139:109 (Ask JA, et al)
–, blood respiratory properties 145:117 (Tetens V, Lykkeboe G)
–, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, choline acetyltransferase activity in swimbladder 146:57 (Fänge R, Holmgren S)
–, cholinergic mechanisms 122:325 (Wood CM)
–, effects of calcium and pH on gill potentials 126:277 (McWilliams PG, Potts WTW)
–, effects of pituitary hormones on plasma thyroid hormones 124:105 (Milne RS, Leatherland JF)
–, hypoxia and blood oxygen binding properties 136:83 (Soivio A, et al)
–, hypoxic response of secondary lamellae 145:37 (Soivio A, Tuurala H)
–, inotropic effects of adrenaline on myocardium 147:123 (Gesser H, et al)
–, ionic and respiratory regulation in seawater 134:351 (Bath RN, Eddy FB)
–, Na-ATPase and NaK-ATPase in the gills 124:97 (Pfeiler E)
–, Na/NH_4 exchange in perfused gill 124:181 (Payan P)
–, osmotic adaptation and gill energetics 144:175 (Leray C, et al)
–, plasma cortisol 146:123 (Schmidt SP, House EW)
–, properties of liver mitochondria 143:269, 275 (Suarez RK, Hochachka PW)
–, pyruvate carboxylase in liver 143:281 (Suarez RK, Hochachka PW)
–, rapid changes in blood acid-base status 148:123 (Thomas S, Le Ruz H)
–, response of minnow to strikes by – 147:371 (Webb PW)
–, systemic vasculature 122:325 (Wood CM)
–, temperature adaptation and membrane turnover 149:11 (Hazel JR, Neas NP)
–, temperature effects on atrial adrenoceptors 143:161 (Ask JA, et al)
–, temperature effects on pH optima of enzymes 123:97 (Hazel JR, et al)
–, thermal acclimation and hepatic lipogenesis 134:321 (Hazel JR, Prosser CL)
–, thermoacclimation of oxygen transport 140:255 (Nikinmaa M, et al)
Salmon, sokeye, see *Oncorhynchus*
Salt balance in the cod 124:157 (Fletcher CR)
– – in a euryhaline turtle 145:101 (Cowan FBM)
– –, function of fowl colon and coprodeum 146:51; 147:65 (Rice GE, Skadhauge E)
– – in a freshwater/land crab 142:451 (Greenaway P)
– –, hormonal control in salamanders 132:357 (Brown PS, et al)
– -excreting organ, function of anal portion of mosquito larval – 138:59 (Asakura K)
– excretion in the leech 139:97 (Wenning A, et al)
– gland control in salt adapted Pekin ducks 129:301 (Deutsch H, et al)
– – function in a euryhaline turtle 145:101 (Cowan FBM)
– – secretion, influence of carotid blood tonicity on – in Pekin ducks 149:451 (Hammel HT, et al)
– – – in saltwater adapted Pekin duck 149:457 (Kaul R, et al)
– glands, lingual, in Crocodilia 149:43 (Taplin LE, et al)
– regulation, NaCl balance in the crab 123:127 (Cameron JN)
– taste quality discrimination in the fly 133:53 (Maes FW, Bijpost SCA)
– -transport, hormonal effects on chloride secretion by teleost opercular membrane 146:27 (Foskett JK)
Salting-out effect in fish swimbladder rete 146:129 (Gerth WA, Hemmingsen EA)
Salvelinus, calcium regulation of actomyosin 129:169 (Johnston IA, Walesby NJ)
–, electric field 141:277 (Butsuk SV, Bessonov BI)
–, energetics of development 149:485 (Gruber K, Wieser W)
–, temperature acclimation and adenine nucleotides in muscle 139:127 (Walesby NJ, Johnston IA)
Sarcophaga, photoperiodic induction of diapause 124:75; 127:197; 132:179; 145:421 (Saunders DS)
Sarcophilus, thermoregulation, respiration and sleep 140:241 (Nicol SC, Maskrey M)
Sarcoplasmic reticulum, temperature adaptation of fish – 135:157 (McArdle HJ, Johnston IA)
Sarotherodon, hormonal control of chloride secretion 146:27 (Foskett JK, et al)
–, intestinal water and NaCl absorption 146:1 (Mainoya JR)
Sarsia, swimming activity 136:219 (Leonard JL)
Scallop, see *Chlamys, Pecten, Placopecten*
Scanning of crab eyes during walking 124:249 (Sandeman DC)
–, visual, in the honey bee 130:173 (Anderson AM)
Scaphirhynchus, ampullary electroreceptors 138:213 (Teeter JH, et al)
Sceloporus, circadian organization 141:537 (Underwood H)
–, effects of training and captivity on metabolism 129:123 (Gleeson TT)
–, lactate and glycogen metabolism during exercise 147:79 (Gleeson TT)
–, melatonin and circadian rhythmicity 130:317 (Underwood H)
–, thermal effects on muscle 147:11 (Putnam RW, Bennett AF)
Scent organs, prerequesites for pheromone production in *Danaus* 126:97 (Boppré M, et al)
Schistocerca, connexions between second-order ocellar neurons 147:401 (Simmons PJ)
–, coordinating interneurons of ventilatory system 139:305 (Pearson KG)
–, femoral chordotonal organ and leg movements 134:173 (Bässler U)
–, flight behavior 131:39, 49, 59 (Baker PS), 67 (Cooter RJ), 79, 89 (Baker PS, Cooter, RJ)
–, large neurons in neck connectives 147:379 (Williamson R, Burns MD)
–, mechanical time resolution in the ear 143:289 (Schiolten P, et al)

Schistocerca, modulation of an electrical synapse 137:233 (Rowell CHF, O'Shea M)
–, motoneuron variability 134:55 (Kien J)
–, muscle tension receptor in the leg 131:247 (Theophilidis G, Burns MD)
–, neck muscle motoneurons 140:321 (Kien J)
–, plurisegmental motor control 140:303 (Kien J)
–, sensory deprivation of visual interneuron 135:191 (Bloom JW, Atwood HL)
–, structural changes in light-deprived rhabdom 144:357 (Bloom JW, Atwood HL)
–, synaptic transmission by ocellar neurons 145:265 (Simmons PJ)
–, tegula inputs to flight motoneurons 133:299 (Kien J, Altman JS)
–, tritocerebral commissure giant interneurone 126:317 (Bacon J, Tyrer M)
–, wind-sensitive interneurone 150:439 (Bacon J, Möhl B)
Schistosoma, effects on snail basal metabolism 135:101 (Becker W)
Schooling, sensory basis of fish – 135:315 (Partridge BL, Pitcher TJ)
Schools, internal dynamics of fish – 144:313 (Partridge BL)
Sciurus, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Sclerodactyla, metabolic adaptations 122:347 (Ellington WR, Hammen CS)
Sclerotization, cuticular, in honeybee 145:17 (Andersen SO, et al)
SCN, see suprachiasmatic nucleus
Scorpaena, pressure adaptation of lactate dehydrogenase 129:295 (Siebenaller JF, Somero GN)
Scorpiones, arhabdomeric cells in *Androctonus* median eye 130:265 (Schliwa M, Fleissner G)
–, hemocyanins of *Pandinus* and *Androctonus* 130:283 (Markl J, et al)
–, seasonal changes in *Centruroides* cuticle 129:319 (Toolson EC, Hadley NF)
–, vibration detection in sand by *Paruroctonus* 131:23, 31 (Brownell P, Farley RD)
–, walking leg motor neurones of *Paruroctonus* 140:31 (Bowerman RF, Burrows M)
–, xanthine excretion in *Paruroctonus* 142:423 (Yokota SD, Shoemaker VH)
Scotophase, long, effect on rodent heat production 148:77 (Haim A)
Scratch reflex, seasonal rhythm of cat – 142:227 (Randall W)
– – in a turtle 140:287 (Stein PSG, Grossman ML); 145:477 (Bakker JGM, Crowe A); 146:401 (Stein PSG, et al)
Sculpin, see *Myoxocephalus*
Scyliorhinus, cerebellar action on reflex movement 134:69 (Paul DH, Roberts BL)
–, cyclic AMP stimulation of rectal gland secretion 140:209 (Shuttleworth TJ, Thompson JL)
–, effect of hypoxia on catecholamines 127:325 (Butler PJ, et al)
–, effect of hypoxia on metabolism 132:297 (Butler PJ, et al)
–, oxygen consumption in rectal gland 136:39 (Shuttleworth TJ, Thompson JL)
–, respiratory gas exchange 132:289 (Short S, et al)
Scylla, canal-receptor properties 130:101 (Janse C, Sandeman DC)
–, color discrimination 133:159 (Leggett LMW)
–, diurnal changes in photoreceptor angular sensitivity 144:99 (Leggett LMW, Stavenga DG)
–, hair receptors in statocyst 137:51 (Janse C)
–, repetitive activation of antennular motor units 142:189 (Snow PJ)
–, statocysts and compensatory eye reflex 130:95 (Janse C, Sandeman DC)
Sea cucumber, see *Sclerodactyla*
Seal, see *Halichoerus, Leptonychotes, Phoca*
Searching behavior of desert ants 142:315 (Wehner R, Srinivasan MV)
Seasonal changes of catecholamine effects in the eel 138:367 (Peyraud-Weitzenegger M, et al)
– – in Na-transport and enzyme activity in tortoise intestinal epithelium 129:355 (Gilles-Baillien M)
– – in scorpion cuticular permeability and lipid composition 129:319 (Toolson FC, Hadley NF)
– – in sparrow blood composition 129:151 (deGraw WA, et al)
– differences in burbot circadian rhythm period length 135:215 (Kavaliers M)
– – in fowl responses to endotoxemia 134:287 (Merrill GF, et al)
– rhythm, photoperiodic control of a complex – 142:227 (Randall W)
– thermogenesis in hamster 149:1 (Heldmaier G, et al)
Sebastes, electric field 141:277 (Butsuk SV, Bessonov BI)
Sebastolobus, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN); 129:295 (Siebenaller JF, Somero GN)
Secretagogues, effects on Na and K secretion in mosquito Malpighian tubules 149:511 (Williams JC Jr, Beyenbach KW)
Seirarctica, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Self-movement detectors in the dragonfly 142:27 (Olberg RM)
Sensorimotor interfacing in toad optic tectum 144:429 (Weerasuriya A, Ewert J-P)
Sensory basis of fish schools 135:315 (Partridge BL, Pitcher TJ)
– deprivation of locust visual interneuron 135:191 (Bloom JW, Atwood HL)
– encoding for temporal pattern discrimination in fish JAR 136:165 (Baker CL Jr)
– epithelia, transepithelial voltages across arthropod – 134:119 (Thurm U, Wessel G)
– epithelium, active ion transport 134:131 (Küppers J, Thurm U)
– filter, neural basis of – in electric fish posterior lateral line lobe 145:153 (Partridge BL, et al)
– functions of ray cerebellum 148:399 (Tong SL, Bullock TH)
– innervation, femur of *Carausius* 121:99 (Bässler U)
– inputs to frog midbrain 142:161 (Comer C, Grobstein P)
– mechanisms of cricket eye cleaning 129:247 (Honegger H-W, et al)
– neurons, trigeminal, of lamprey 123:329 (Matthews C, Wickelgren WO)
– physiology, see chemoreception, electroreception, hearing, mechanoreception, vision
– transduction in a locust multipolar joint receptor 150:207 (Kuster JE, French AS)
Sepia, arginine phosphate and octopine effects on glycolytic enzymes 142:501 (Storey KB)
–, octopine metabolism 131:311 (Storey KB, Storey JM)
Sesarma, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
Sex differences in mormyrid EOD 145:399 (Westby GWM, Kirschbaum F)
– -specific photoreceptors in a fly 145:139 (Hardie RC, et al)
Sexual differences in cricket calling song recognition 146:217 (Pollack GS)
– dimorphism in fly visual system 150:379, 395 (Zeil J)
Shark, see *Negaprion*
Shivering in cold exposed pigeons 133:151 (Schmidt I, Simon E); 136:77 (Hohtola E, et al)
Shrew, see *Notiosorex*
Shrimp, see *Alpheus, Callianassa, Crangon, Macrobrachium, Palaemon, Scylla*
Signal production, vibratory, in fiddler crabs 150:483 (Aicher B, et al)
Silk moth, see *Attacus, Hyalophora*
Silkworm, see *Bombyx*
Singing, temperature effects on cricket – 143:199 (Prestwich KN, Walker TJ)
–, arboreal, of a burrowing cricket 132:217 (Paul RC, Walker TJ)
Sinus gland, hyperglycemic neurohormone from crayfish – 141:445 (Keller R)
– –, neurosecretory polypeptides in crustacean – 134:303 (Andrew RD, Saleuddin ASM)
– – hormones, crustaceans 122:359 (Keller R)
Siphonophore, see *Chelophyes*
Siskin, see *Carduelis*
Size estimation, bulldog ant 121:33 (Via SE)
Skate, see *Raja, Trygon*
Skin, see also dermal
–, temperature-sensitive receptors in pigeon feathered – 135:201 (Necker R, Reiner B)
–, thermal stimulation of – and hypothalamic activity 126:151 (Rosner G)
– mechanoreceptors in amphibian embryos 135:341 (Roberts A)

Skin potential, effect on catfish electroreceptor sensitivity 147:329 (Roth A)
Sleep, circadian activity of – in the rat 128:37 (Borbély AA, Neuhaus HU)
–, effects of photoperiods on daily pattern of – in the rat 124:1 (Borbély AA, Neuhaus HU)
–, low temperature dormancy in catfish 148:41 (Crawshaw LI, et al)
– in the Tasmanian devil 140:241 (Nicol SC, Maskrey M)
–, -deprivation, effects on sleep and EEG in the rat 133:71 (Borbély AA, Neuhaus HU)
Slit sense organ, lyriform, of a spider 125:37 (Barth FG, Bohnenberger J); 125:45 (Seyfarth E-A); 142:391 (Bohnenberger J)
– sensilla, vibration sensitivity of spider – 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
– sensillum, outward current excites spider – 147:423 (Seyfarth E-A, et al)
Slug, see *Ariolimax, Limax*
Snail, see Gastropoda
Snake, see *Acrochordus, Elaphe, Natrix, Pelamis, Thamnophis, Vipera*
Snapping, visually mediated, in bulldog ant 121:33 (Via SE)
Sodium, see also Na
–, effect on calcium movements in rat muscle 126:233 (Huddart H, Saad KHM)
– balance, effects of pH and salt content in cladocerans 129:289 (Potts WTW, Fryer G)
– cotransport systems in flounder intestine and kidney 135:175 (Eveloff J, et al)
– flux, effect of lanthanum on – in goldfish gill 129:145 (Eddy FB, Bath RN)
– influx in freshwater mussel gills 143:185 (Dietz TH, Graves SY)
– pump, effect of temperatures on – of red cells in hibernators 138:43 (Willis JS, et al)
– –, eletrogenic, in molluscan muscle cells 132:141 (Kobayashi M, Ando M)
– regulation in a freshwater/land crab 142:451 (Greenaway P)
Song, active space of blackbird – 147:511 (Brenowitz EA)
– spectrum, role in cricket acoustic orientation 141:93 (Oldfield BP)
Sorbitol, temperature control of – levels in overwintering gall fly larva 149:495 (Storey JM, Storey KB)
–, temperature dependent utilization in silkworm diapause eggs 147:21 (Furusawa T, et al)
Sound communication, effect on hormone production of testes in frogs 140:25 (Brzoska J, Obert H-J)
– – and magnetic fields in honeybees 132:11 (Kilbert K)
– –, temperature effects on treefrog – 137:1 (Gerhardt HC, Mudry KM)
– detection in lemon shark 142:379 (Corwin JT)
– direction, bilateral coding in bushcricket CNS 140:101 (Rheinlaender J, Römer H)
– –, sensitivity of cricket auditory system to – 121:79 (Hill KG, Boyan GS)
– emission, laryngeal nerve activity during – in a bat 143:317 (Schuller G, Rübsamen R), 323 (Rübsamen R, Schuller G)
– localization by the barn owl 133:1 (Knudsen EI, et al), 13 (Knudsen EI, Konishi M)
– –, role of owl interaural pathway 144:299 (Moiseff A, Konishi M)
Sound production, see also call, calling, singing, song, stridulation, vocalization
– – of bats during avoidance maneuvers 148:389 (Jen PHS, Kamada T)
– –, body vibration and stridulation in leaf cutting ants 150:239 (Masters WM, et al)
– – in *Cicadetta* 142:271 (Popov AV)
– – in a cockroach 132:27 (Nelson MC)
– –, echolocating clicks in the grey swiftlet 148:457 (Suthers RA, Hector DH)
– – in hydropsychid larvae 140:159 (Silver SC, Halls JAT)
– –, innervation of sparrow syrinx 129:281 (Seller TJ)
– –, selective laryngeal neurotomy and control of bat phonation 145:529 (Suthers RA, Fattu JM)
– –, stridulation in Acrididae 122:53 (Helversen O von, Elsner N)
– –, subglottic pressure during bat echolocation 143:465 (Fattu JM, Suthers RA)
– –, tooth impact rate in grasshopper song 124:27 (Skovmand O, Pedersen SB)
– reception, see hearing
– signals, coding in locust ventral cord 128:213 (Kalmring K, et al)
– transmission in insect acoustic tracheal tubes 143:297 (Larsen ON)
– – through avian interaural pathways 136:183 (Rosowski JJ, Saunders JC)
Sounds, adaptive echolocation –, of a bat 144:559 (Habersetzer J)
Spalax, control of heart rate 142:533 (Storier D, et al)
Sparrow, see *Padda, Passer, Zonotrichia*
Spectral characteristics of visual interneuron response in cockroach optic lobe 141:395 (Mote MI, Rubin LJ)
– effects of pupil in fly photoreceptors 146:145 (Vogt K, et al)
– preference, receptor input in *Drosophila* 121:241 (Hu KG, Stark WS)
– sensitivities of bumblebee compound eye and median ocellus 139:261 (Meyer-Rochow VB)
– – of retinular cells in living, intact flies 134:95 (Bernard GD, Stavenga DG)
– – of fly photoreceptors 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al), 41 (Smola U, Meffert P); 134:95 (Bernard GD, Stavenga DG)
– sensitivity of bee's eye 137:193 (Bernard GD, Wehner R)
– – of butterfly larval ocelli 139:41 (Ichikawa T, Tateda H)
– – of crab photoreceptors 145:549 (Martin FG, Mote MI)
– – of crustacean larvae 133:311 (Forward RB Jr, Cronin TW)
– – of dragonfly ocellar neurons 144:91 (Mobbs PG, et al)
– –, effect of spectral light deprivation on bee- 147:365 (Hertel H)
– – of fly monopolar neurons 123:335 (Moring J)
– – of firefly eye 135:21; 147:195 (Lall AB, et al)
– – of jumping spider photoreceptors 145:227 (Blest AD, et al)
– – of landing blowfly 150:319 (Tinbergen J, Abeln RG)
– transmission in vertebrate brains 130:277 (Hartwig HG, Veen T van)
Spectrosensitometry of beetle photoreceptors 142:95 (Gribakin FG)
Speophyes, antennal warm and cold receptors 143:443 (Loftus R, Corbière-Tichané G)
Spermophilus, circannual cycles 136:349, 355 (Mrosovsky N); 150:233 (Joy JE, Mrosovsky N)
–, effect of pinealectomy on hibernation 146:501 (Phillips JA, Harlow HJ)
–, endogenous annual rhythms 135:333 (Kenagy GJ)
–, intraspecific differences in hibernation patterns 148:83 (French AR)
–, nitrogen catabolism during starvation 149:565 (Bintz GL, Strand CE)
–, seasonal thermogenic capacity 140:235 (Abbotts B, Wang LCH)
–, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
–, visual sensitivity 136:291 (Jacobs GH, et al)
Sphenomorphus, fetal-maternal shift of blood oxygen affinity 142:495 (Grigg GC, Harlow P)
Spherical aberration of roach lens 121:135 (Srozyński S)
Sphingomorpha, detection of bat sounds 143:363 (Fullard JH, Thomas DW)
Sphodromantis, head grooming after foreleg amputation 125:253 (Zack S)
Spiders, see Araneae
Spiegeloptik des Krebsauges 135:1 (Vogt K)
Spinal cord, effect of thermal stimulation on hypothalamic activity 126:151 (Rosner G)
– –, hind limb reflex movements in terrapin 125:351 (Valk-Fai T, Crowe A)
– –, induction of swimming by drug action on lamprey – 136:337 (Poon MLT)
– –, swimming movements elicited by electrical stimulation 124:203 (Stein PSG)
– –, synaptic inhibition in lamprey moto- and interneurons during fictive swimming 147:189 (Kahn JA)
– –, thermal effects on motoneurones in – 139:251 (Görke K)
– –, thermal stimulation and cardiovascular changes in ducks 147:71 (Bech C, et al)
– interneurons, synaptic transmission in lamprey – 143:423 (Homma S)

Spirostreptus, gravity and idiothetic course control 133:267 (Mittelstaedt M-L, et al)
Spodoptera, tetrachromatic visual system 129:235 (Langer H, et al)
Springhare, see *Pedetes*
Squalus, nociceptors in the gills 130:1 (Poole CA, Satchell GH)
Squid, see *Loligo*
Squilla, effect of morphine and naloxone on defensive response 147:455 (Maldonado H, Miralto A)
Squirrel, see *Glaucomys*, groundsquirrel, *Sciurus*
– monkey, see *Saimiri*
Squirrelfish, hearing differences among species 132:203 (Coombs S, Popper AN)
Stagmatoptera, arginine and memory consolidation 147:231 (D'Alessio G, et al)
Starfish, see *Asterias*
Starling, see *Sturnus*
Starvation, effect on enzyme activities in the plaice 136:31 (Moon TW, Johnston IA)
–, effect on ground squirrel circannual cycles 139:355 (Mrosovsky N)
–, effect on metabolism of eel hepatocytes 135:127 (Renaud JM, Moon TW)
–, effect on metabolism and storage products in a snail 123:149 (Streit B)
–, metabolic response to – in a shrimp 141:549 (Regnault M)
–, nitrogen catabolism in ground squirrels during – 149:565 (Bintz GL, Strand CE)
Statocyst, hair receptor functions in crab – 137:51 (Janse C)
– afferent discharge patterns in crayfish 123:1 (Ozeki M, et al)
– control of crayfish uropod steering movements 139:243 (Yoshino M, et al)
– interneurons in crayfish 149:287, 301 (Takahata M, Hisada M)
– sensory cells, function of *Aplysia* – 150:359 (Janse C)
Statocysts, effect on eye stabilization in *Nautilus* 132:117 (Hartline PH, et al)
–, induction of phase and gain in crab – 130:95, 101 (Janse C, Sandeman DC)
–, polarization of crayfish hair receptors 130:201 (Takahata M, Hisada M)
–, role in snail gravity orientation 145:311 (Janse C)
Steering, vertical, in euphausiids 137:255 (Land MF)
– movements of crayfish uropods, control by statocysts 139:243 (Yoshino M, et al)
Stemmata, distribution of color receptors in – 149:317 (Ichikawa T, Tateda H)
–, receptive field of swallowtail butterfly – 146:191 (Ichikawa T, Tateda H)
Stentor, membrane permeabilities and mechanoreceptor potentials 146:537 (Wood DC)
Sternarchorhamphus, active phase coupling 128:235 (Langner G, Scheich H)
Sternarchorhynchus, active phase coupling 128:235 (Langner G, Scheich H)
Sternopygus, electrolocation under jamming 125:285 (Matsubara J, Heiligenberg W); 149:339 (Matsubara JA)
Steroid synthesizing capacities of starfish ovaries and pyloric caeca 138:27 (Schoenmakers HJN)
Stichopus, muscle contractions 136:103 (Prosser CL, Mackie GO)
Stick insect, see *Carausius*, *Extatosoma*
Stomatogastric ganglion, ionic requirements for neuron bursting activity in lobster – 145:191 (Gola M, Selverston A)
– –, motor pattern generators in crustacean – 143:453 (Robertson RM, Moulins M)
– – of *Panulirus* 122:227 (Mulloney B)
– –, properties of pyloric neurons in crab – 130:221, 229 (Hermann A)
Stomoxys, blood meal as regulator of triacylglycerol synthesis 147:49 (Venkatesh K, Morrison PE)
Stress, effects on cod circulation 137:139 (Wahlqvist I), 145 (Wahlqvist I, Nilsson S)
–, effect on distribution of leucocytes in a newt 125:205 (Bennett MF, Reap LE)
–, effect on Na and Cl excretion by fish gills 123:155 (Pic P)
Stretch receptor in butterfly bursa copulatrix 130:191 (Sugawara T)
– –, effect of temperature on crayfish – 133:257 (Moser H, et al)
– –, crayfish escape behavior 121:187 (Wine JJ)
– –, ionic regulation of action potentials in *Carausius* 122:45 (Finlayson LH, Orchard I)
Stridulation, analysis of cricket – 136:247 (Koch UT)
–, disturbance –, in insects 135:259 (Masters WM)
–, structure of – of *Orchelimum* 126:343 (Nielsen ET)
– and tegminal resonance in a tree cricket 129:269 (Sismondo F)
Stridulatory movements of *Chorthippus* 122:53 (Helversen O von, Elsner N)
Striz, electrical and acoustical activation of middle ear muscle 150:61 (Oeckinghaus H, Schwartzkopff J)
–, schematic optics and visual performance of the eye 145:341 (Martin GR)
Strombine formation, role on mussel adductor muscle energy metabolism 149:557 (Zwaan A de, et al)
Strophocheilus, enzymes in hepatopancreas 129:129 (Sollock RL, et al)
Sturgeon, see *Scaphyrhinchus*
Sturnus, circannual rhythms 146:419 (Gwinner E, Wozniak J)
–, effects of pinealectomy on circadian rhythms 126:123 (Gwinner E)
–, effects of pinealectomy on circannual testicular rhythm 136:345 (Gwinner E, Dittami J)
–, electrical and acoustical activation of middle ear muscle 150:61 (Oeckinghaus H, Schwartzkopff J)
–, synchronization of circadian rhythm by melatonin 127:209 (Gwinner E, Benzinger I)
Stylocheiron, optics of the eye 130:49 (Land MF, et al)
Stylonychia, mechanoreceptor potentials 127:255 (Peyer JE de, Machemer H)
–, membrane excitability 121:15 (Peyer JE de, Machemer H)
–, voltage dependence of K^+ mechanoreceptor current 141:173 (Deitmer JW)
–, voltage-dependent ciliary activation 150:223 (Peyer JE de, Machemer H)
Subglottic pressure during bat echolocation 143:465 (Fattu JM, Suthers RA)
Substrate, effect on control of lobster compensatory eye responses 150:23 (Schöne H, et al)
– orientation in lobsters 126:287 (Scapini F, et al), 293 (Schöne H, et al); 129:217 (Neil DM, et al)
Subzero temperature tolerance in spiders 131:347 (Duman JG)
Sucker, white, see *Catostomus*
Sugar reception in the cockroach 124:353 (Wieczorek H)
– – by an insect water receptor 138:167 (Wieczorek H)
– receptors in fly taste hairs 149:207 (Wieczorek H, Köppl R)
– sensitive cell of a beetle 132:167 (Mitchell BK, Gregory P); 146:393 (Sutcliffe JF, Mitchell BK)
Sugars, effects on fly labellar water receptor 126:131 (Wieczorek H, Köppl R)
Superposition eyes, dynamics of pigment migration in – 143:491 (Dreisig H)
Suprachiasmatic neurons, visual properties 135:349 (Groos GA, Mason R)
– nucleus, circadian pacemaker in rat – 146:153 (Inouye ST, Kawamura H)
– –, correlation of activity patterns in blind mice with hypogenesis of – 149:333 (Scheuch GC, et al)
– –, role in control of sparrow circadian rhythms 141:207 (Ebihara S, Kawamura H)
– –, role in rat rhythmicity 143:401 (Stephan FK)
Sustaining fibers, dendritic projection correlates with crayfish visual receptive fields 146:175 (Kirk MD, et al)
– –, responses to illumination, membrane properties and adaptation 150:419 (Kirk MD, et al)
Swallow, see *Riparia*
Swan, see *Cygnus*
Swiftlet, see *Collocalia*
Swim interneurons, *Tritonia* 121:325 (Getting PA)
Swimbladder, ChAT activity in fish – 146:57 (Fänge R, Holmgren S)
–, salting-out effect in – rete 146:129 (Gerth WA, Hemmingsen EA)
Swimming, adaptations of penguin during – under water 137:17 (Nachtigall W, Bilo D)

Swimming, central control in a jellyfish 133:357 (Satterlie RA)
–, energy production during – in a mollusc 129:361 (Baldwin J, Lee AK)
–, induction of – in lamprey by L-DOPA and amino acids 136:337 (Poon MLT)
– in *Limulus* 141:77 (Watson III WH)
–, oxygen consumption during – in marine iguanas 141:531 (Vleck D, et al)
–, synaptic basis for initiation of – in leech 148:253, 265 (Weeks JC)
– activity, temporal organization of hydrozoan – 136:219 (Leonard JL)
– movements, elicited by electrical stimulation of turtle spinal cord 124:203 (Stein PSG)
– muscle, subumbrellar, action potential and contraction of hydromedusan – 144:401 (Spencer AN, Satterlie RA)
Sylvia, endogenously controlled changes in migratory direction 125:267 (Gwinner E, Wiltschko W)
Sympathetic control of cod vasculature 144:153 (Wahlqvist I, Nilsson S)
– nervous control of cod gill blood flow 144:157 (Nilsson S, Pettersson K)
– – – of cod iris sphincter 138:149 (Nilsson S)
Sympetrum, efferent system of lateral ocellus 125:341 (Kondo H)
–, ocellar neuron spectral sensitivity 144:91 (Mobbs PG, et al)
–, pigment migration in the ocelli 129:199 (Stavenga DG, et al)
Synapse, chemical, in catfish electroreceptors 126:147 (Roth A)
–, electrical, modulation of a locust – 137:233 (Rowell CHF, O'Shea M)
–, neuromuscular, in a medusa 148:353 (Spencer AN)
Synaptic basis of swim initiation in leech 148:253, 265 (Weeks JC)
– depression, crayfish neuromuscular junctions 121:223 (Zucker RS, Bruner J)
– excitation in crab cardiac muscle fibres 143:349 (Benson JA)
– inhibition in lamprey spinal moto- and interneurons during fictive swimming 147:189 (Kahn JA)
– pathways in leech nervous system 144:449 (Kramer AP)
– transmission in catfish electroreceptor 142:371 (Teeter JH, Bennett MVL)
– – in lamprey spinal interneurons 143:423 (Homma S)
– – by locust ocellar neurons 145:265 (Simmons PJ)
Synchelidium, phototaxis 135:243 (Forward RB Jr)
Syringeal denervation, effect on hypoglossal dominance in canaries 134:227 (Nottebohm F, et al)
Syrinx, unilateral nervous control in Java sparrows 129:281 (Seller TJ)
Syritta, rules of optomotor system during voluntary flight 138:271 (Collett TS)
–, visual reflex interaction 140:145 (Collett TS)
Systemic vasculature, trout 122:325 (Wood CM)

T

Tactile prey capture behavior in frogs 142:141, 151 (Comer C, Grobstein P)
Tadarida, echolocation 125:291 (Simmons JA, et al)
Talpa, temperature effects on red cell sodium pump 138:43 (Willis JS, et al)
Tapetum lucidum, tracheal, in pierid eyes 132:1 (Ribi WA)
Taphozous, circadian rhythm 127:239 (Subbaraj R, Chandrashekaran MK)
–, inferior collicular neuron responses 146:423 (Jen PHS, Suthers RA)
Tarantula, hemocyanin 130:283 (Markl J, et al)
Target catching by hoverflies 125:191 (Collett TS, Land MF)
– localization in sand by scorpion vibration detectors 131:31 (Brownell P, Farley RD)
Tarsal sense organs for vibration detection in a scorpion 131:23 (Brownell P, Farley RD)
Tasmanian devil, see *Sarcophilus*
Taste, genetic dimorphism in fly sensitivity to trehalose 147:433 (Tanimura T, et al)
–, multiple receptor proteins for fly sweet – 141:265 (Tanimura T, Shimada I)
–, responses to amino acids and derivatives in catfish 123:357 (Caprio J)
– cell responses, computerized classification 128:1 (Molen JN van der, et al)
– hairs sensitive to sugars in the cockroach 124:353 (Wieczorek H)
– –, sugar receptors in fly – 149:207 (Wieczorek H, Köppl R)
– specialists, lobster walking leg chemoreceptors as – 146:181 (Derby CD, Atema J)
– system, glossopharyngeal, response properties in the mud puppy 143:143, 151 (Samanen DW, Bernard RA)
– –, oro-pharyngeal, of catfish 150:345 (Kanwal JS, Caprio J)
Tectum, responses of toad T5 neurons to visual stimuli 132:191 (Ewert J-P, et al)
– opticum, neuronal responses in salamander to visual prey stimuli 135:251 (Himstedt W, Roth G)
Tegenaria, digestive α-amylases 127:355 (Mommsen TP)
–, function of trichobothria 123:59 (Reißland A, Görner P), 123:71 (Reißland A)
Tegminal resonance in tree cricket stridulation 129:269 (Sismondo F)
Teleogryllus, acoustic orientation in females 141:93 (Oldfield BP)
–, auditory interneurones 121:1 (Casaday GB, Hoy RR)
–, development of auditory system 127:131 (Ball EE, Hill KG)
–, directional responses to sound in the central nervous system 130:137, 151 (Boyan GS)
–, directionality in acoustic orientation in flying – 146:207 (Pollack GS, Plourde N)
–, frequency resolution of the ear 148:237 (Ehret G, et al)
–, mechanical time resolution in the ear 143:297 (Larsen ON)
–, phonotaxis to components in calling song 144:367 (Pollack GS, Hoy R)
–, primary auditory fibers 143:129 (Hutchings M, Lewis B)
–, sensitivity of auditory system to frequency and sound direction 121:79 (Hill KG, Boyan GS)
–, sexual differences in calling song recognition 146:217 (Pollack GS)
–, splitting of circadian activity rhythm 150:51 (Wiedenmann G)
Teleosts, see also Pisces
–, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Temperature, see also thermal, thermo-
–, effect on alligator blood flow 148:57 (Weinheimer CJ, et al)
–, effect on auditory fibre tuning in geckos 142:219 (Eatock RA, Manley GA)
–, effect on neuromuscular facilitation in crayfish claw 143:53 (Jacobs JR, Atwood HL)
–, effect on spike generation and modulation in crab motor axon 142:309 (Stephens PJ, Atwood HL)
–, – on anuran auditory thresholds 130:9 (Mohneke R, Schneider H), 17 (Hubl L, Schneider H)
–, effect on crab respiration 130:309 (Taylor EW, Wheatly MG)
–, effect on crayfish stretch receptor 133:257 (Moser H, et al)
–, effect on cricket singing 143:199 (Prestwich KN, Walker TJ)
–, effect on dragonfly wing stroke frequency 144:229 (May ML)
–, effect on frog heart 132:313 (Stene-Larsen G, Helle KB)
–, effect on gas content and acid-base status in spider hemolymph 134:331 (Loewe R, Brauer de Eggert H)
–, effect on ground squirrel circannual cycles 136:349, 355 (Mrosovsky N)
–, effect on mechanotransduction in cockroach tactile spine 147:251 (French AS, Kuster JE)
–, effect on metabolism of an Antarctic mite 131:341 (Young SR)
–, effect on mouse water balance 133:241 (Esher RJ, Wolfe JL)
–, effect on pH optima of trout enzymes 123:97 (Hazel JR, et al)
–, effect on sodium pump of hibernator and non-hibernator red cells 138:43 (Willis JS, et al)
–, effect on treefrog sound communication 137:1 (Gerhardt HC, Mudry KM)

Temperature, effect on trout atrial adrenoceptors 143:161 (Ask JA et al)
–, effect on turtle respiration 131:353 (Glass ML, et al)
–, effect on pigeon and leguan spinal motoneurons 139:251 (Görke K)
–, interactive effects of – and pH on toad muscle 145:67 (Renaud JM, Stevens ED)
– acclimation and calcium regulation of fish actomyosin ATPases 129:163 (Johnston IA), 169 (Johnston IA, Walesby NJ)
– –, effect on salamander respiration and acid-base balance 144:241 (Burggren WW, Wood SC)
– – of goldfish muscle 124:111 (Johnston I, Lucking M)
– –, intermediary metabolism in overwintering gall fly larva 144:183 (Storey KB, et al), 191 (Storey KB, Storey JM)
– – in trout muscle 139:127 (Walesby NJ, Johnston IA)
– –, ventilation and acid-base status in crabs 128:109 (McMahon B, et al)
– –, seasonal, in finches 125:101 (Carey C, et al)
– adaptation, effects on membrane lipid turnover in trout 149:11 (Hazel JR, Neas NP)
– – of fish sarcoplasmic reticulum 135:157 (McArdle HJ, Johnston IA)
– compensation in poikilotherm peripheral nervous system 142:411 (Macdonald JA)
– dependent light reactions in hatchling alligators 136:243 (Kavaliers M)
– – sorbitol utilization in silkworm eggs 147:21 (Furusawa T, et al)
– insensitive O_2 affinity of tree frog blood 136:71 (Johansen K, et al)
– tolerance, subzero, in spiders 131:347 (Duman JG)
Tenodera, foveal fixation and tracking 139:307 (Rossel S)
–, photoreceptor performance 131:95 (Rossel S)
Tension, long term facilitation of – in crayfish muscles 144:335 (Jacobs JR, Atwood HL)
Tentacles, function in snail olfactory orientation 143:357 (Chase R, Croll RP)
Terrapene, respiratory responses to temperature 131:353 (Glass ML, et al)
Terrapin, see *Pseudemys*
Testicular ryhthm, circannual, effect of pinealectomy on starling – 136:345 (Gwinner E, Dittami J)
Testudo, lung ventilation 126:203 (Burggren WW, et al)
–, seasonal changes in intestinal Na-transport 129:355 (Gilles-Baillien M, et al)
Tetrachromatic visual system of a moth 129:235 (Langer H, et al)
Tetrahymena, amino acid uptake and incorporation 140:267 (Wheatley DN, Walker E)
–, Na-independent uptake of nutrients 125:97 (Rasmussen L, et al)
Tetranychus, photoperiodic time measurement 134:203, 219 (Vaz Nunes M, Veerman A)
Tettigonia, biophysics of the ear 123:193 (Michelsen A, Larsen ON), 205 (Seymour C, et al)
–, coding in auditory/vibrational neurons 139:267 (Kalmring K, Kühne R)
–, directional hearing 140:401 (Rheinlaender J, Römer H)
–, time resolution in the ear 143:297 (Larsen ON)
Tettigoniidae, auditory function 142:169 (Hill KG, Oldfield BP)
Thalamus, mating call selectivity of neurons in frog – 150:333 (Fuzessery ZM, Feng AS)
Thamnophis, diurnal ventilatory patterns 149:503 (Hicks JW, Riedesel ML)
Thanasimus, reception of bark beetle pheromone 150:371 (Hansen K)
Thermal acclimation, effect on trout hepatic lipogenesis 134:321 (Hazel JR, Prosser CL)
– – of snake blood respiratory properties 130:293 (Johansen K, Lykkeboe G)
– components of bombardier beetle chemical defense 135:51 (Dean J)
– effects on lizard muscles 147:11 (Putnam RW, Bennett AF)
– hysteresis producing protein from the milkweed bug 142:539 (Patterson JL, et al)
– limits for goldfish behavioral function 129:241 (Hoyland J, et al)
– – of neuromuscular function in an Antarctic fish 147:237 (Macdonald JA, Montgomery JC)
Thermoacclimation of oxygen transport mechanisms in trout 140:255 (Nikinmaa M, et al)
Thermogenesis in *Spermophilus* 140:235 (Abbotts B, Wang LCH)
–, nonshivering, in hamster 149:1 (Heldmaier G, et al)
Thermoreception, antennal warm and cold receptors of a cave beetle 143:443 (Loftus R, Corbière-Tichané G)
– in vampire bat 146:223 (Kürten L, Schmidt U)
Thermoreceptive sensillum of the stick insect 132:149 (Tichy H)
Thermoreceptors in pigeon feathered skin 135:201 (Necker R, Reiner B)
Thermoregulation, brain temperatures in pigeons 129:115 (Bernstein MH, et al)
–, brain temperature and rete mirabile ophthalmicum in zebra finch 145:89 (Bech C, Midtgård U)
– in chipmunks 125:175 (Chappell MA, et al)
–, cold defense responses in pigeons during sleep and wakefulness 136:77 (Hohtola E, et al)
–, cryoprotectant polyol metabolism in gall fly larvae 149:495 (Storey JM, Storey KB)
–, development in bank swallows 149:99 (Marsh RL, Wickler SJ)
– by conditioned heart-rate changes in pigeon 144:375 (Sieland M, et al)
–, daily torpor in a mouse 125:157 (Lynch GR, et al)
–, effects of color changes on lizard – 135:139 (Rice GE, Bradshaw SD)
–, effects of long scotophase and cold acclimation on rodent heat production 148:77 (Haim A)
–, effects of pinealectomy on fish seasonal and circannual rhythms in – 146:235 (Kavaliers M)
–, effect of plumage color on heat gain in pigeon 126:211 (Walsberg GE, et al)
–, effect of thermal stimulation on hypothalamic activity 126:151 (Rosner G)
–, effect of water restriction on rock hyrax – 138:315 (Rübsamen K, Kettembeil S)
–, facial temperature influences behavioral – in pigeons 146:201 (Schmidt I)
–, freeze-tolerance in beetle larvae 136:53 (Duman JG)
–, freezing resistance of an Arctic isopod 125:165 (Yingst DR)
–, heat balance in the koala 134:293 (Degabriele R, Dawson TJ)
–, heat production and dissipation in golden spiny mice 142:445 (Haim A, Borut A)
–, hypothermia in a desert shrew 137:173 (Lindstedt SL)
–, interaction of behavioral and autonomic – in pigeons 133:151 (Schmidt I, Simon E)
–, modified by central temperatures, in the pigeon 127:75 (Schmidt I)
– in Mongolian small mammals 145:127 (Weiner J, Górecki A)
– in mouse selected for nest-building 123:185 (Lacy RC, et al)
–, nonshivering thermogenesis and cold resistance during seasonal acclimatization in hamster 149:1 (Heldmaier G, et al)
–, norepinephrine turnover in cold exposed redpolls 146:137 (Koban M, Feist DD)
– of a penguin in air and in water 148:93 (Stahel CD, Nicol SC)
– in polar bears 146:63 (Best RC)
– in quail during exercise 149:519 (Nomoto S, et al)
–, rete mirabile ophthalmicum and body-to-brain temperature difference in pigeons 129:119 (Kilgore DL, et al)
–, role of polyols and nucleating agents in cold-hardy beetles 140:227 (Zachariassen KE)
–, seasonal acclimatization in swans 136:61 (Bech C)
–, seasonal control of hamster energy requirements for – 142:429 (Heldmaier G, Steinlechner S)
– in the springhare 133:187 (Müller EF, et al)
–, stimulation of spinal cord and brainstem and cardiovascular changes in ducks 147:71 (Bech C, et al)

Thermoregulation in the Tasmanian devil 140:241 (Nicol SC, Maskrey M)
–, behavioral, effects of preoptic lesions in fish 129:193 (Nelson DO, Prosser CL)
–, colonial, in honeybees 148:65 (Kronenberg F, Heller HC)
–, partial, in silkworm moth 129:315 (Ploye H)
Thermosensitivity, hypothalamic, in chipmunks 125:175 (Chappell MA, et al)
Thermotaxis, nematode mutants defective in – 137:353 (Dusenbery DB, Barr J)
Thunnus, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Thyroid block, effect on daily torpor in a mouse 125:157 (Lynch GR, et al)
– hormone induced changes in rat muscle energy metabolism 142:465 (Nicol CJM, Johnston IA)
– hormones, effects of pituitary hormones on – in trout plasma 124:105 (Milne RS, Leatherland JF)
Thyroidectomy, effect on salamander salt balance 132:357 (Brown PS, et al)
Thyroxine, effect on salamander compass orientation 136:235 (Adler K, Taylor DH)
Tibial receptor neurons in a grasshopper 127:109 (Kalmring K, et al)
Tick, see Acari
Tidal rhythms of amphipod phototaxis 135:243 (Forward RB Jr)
Tiering of jumping spider photoreceptors 145:227 (Blest AD, et al)
Tilapia, see *Sarotherodon*
Time measurement, photoperiodic, in a lizard 125:143 (Underwood H)
Time signal, transplantation in the bee 124:193 (Martin U, et al)
– resolution, mechanical, in insect ears 143:289 (Schiolten P, et al), 297 (Larsen ON)
Tinamou, see *Nothoprocta*
Tipula, flight motor patterning 134:177 (Heide G)
Toad, see *Alytes, Bombina, Bufo, Pelobates, Xenopus*
Toadfish, see *Opsanus*
Tobacco hornworm, see *Manduca*
Torquigíner, adrenergic heart innervation 147:85 (Donald J, Campbell G)
Tortoise, see *Testudo*
Torus longitudinalis in teleosteans 150:39 (Northmore DPM, et al)
– semicircularis, coding of auditory signals in anuran – 138:131 (Walkowiak W)
– –, directional responses of frog – neurons 144:419 (Feng AS)
– –, neural correlates of JAR in *Eigenmannia* 136:135 (Bastian J, Heiligenberg W)
Tracheal hearing trumpet in bushcrickets 123:205 (Seymour C, et al)
– ventilation in silkworm wings 147:27 (Wasserthal LT)
– –, discontinous, in silk moth 145:1 (Wasserthal LT)
Trachops, behavioral responses to sonic frequencies 150:413 (Ryan MJ, et al)
Tracking, angular, and optomotor response in hoverfly 140:145 (Collett TS)
–, antennal, of moving targets in crickets 142:419 (Honegger H-W)
–, visual, in a praying mantis 139:307 (Rossel S)
Training, effect on lizard metabolic capacities 129:123 (Gleeson TT)
–, physiological and biochemical adaptation to – in frog 134:345 (Cummings JW)
Transaminase reactions in anaerobic goldfish 147:53 (Waarde A van, et al)
– – in gastropod hepatopancreas 129:129 (Sollock RL, et al)
Transducer, recording continuously 3-dimensional rotations 126:161 (Zarnack W)
Transepithelial potentials in a crab 131:285 (Robinson GD, Potts WTW)
– voltages across arthropod epidermal receptors 134:119 (Thurm U, Wessel G), 131 (Küppers J, Thurm U)
Transferrin in invertebrate blood 148:101 (Huebers HA, et al)
Transmission at a locust electrical synapse 137:233 (Rowell CHF, O'Shea M)
Transmitters at insect neuromuscular junctions 135:299 (Irving SN, Miller TA); 144:139 (Robinson NL)
Treefrog, see *Chiromantes, Eleutherodactylus, Hyla, Litoria, Phyllomedusa*
Trehalose, genetic dimorphism in *Drosophila* taste sensitivity to – 147:433 (Tanimura T, et al)
–, role in glucose accumulation 126:223 (Starling JA, Fisher FM, Jr)
– absorption in silkworm ovaries 131:333 (Shimada S, Yamashita O)
Trematodes, effects of *Schistosoma* on snail basal metabolism 135:101 (Becker W)
Trematomus, neural temperature compensation 142:411 (Macdonald JA)
–, properties of lactate dehydrogenases 125:129, 135 (Yancey PH, Somero GN)
Triacylglycerol synthesis, blood meals as a regulator of – in stable flies 147:49 (Venkatesh K, Morrison PE)
Triad, hygro- and thermoreceptive, in insect antennal sensillum 132:149 (Tichy H)
Triakis, acoustic evoked activity in the brain 129:223 (Bullock TH, Corwin JT)
Trialeurodes, wavelength specific behavior 144:83 (Coombe PE)
Trichechus, auditory evoked potentials 148:547 (Bullock TH, et al)
Trichobothria, electrophysiology in orb-weaving spiders 123:71 (Reißland A)
–, mechanics in orb-weaving spiders 123:59 (Reißland A, Görner P)
Trichodamon, hemocyanin 130:283 (Markl J, et al)
Trichosurus, cardio-respiratory allometry 145:95 (Dawson TJ, Needham AD)
–, cardiovascular responses to exercise 124:143 (Baudinette RV, et al)
Trigeminal sensory neurons of lamprey 123:329 (Matthews G, Wickelgren WO)
Triopha, gill movements controlling neurons 131:277 (Dickinson PS)
Tritocerebral commissure giant interneuron in locusts 126:317 (Bacon J, Tyrer M); 150:439 (Bacon J, Möhl B); 453 (Möhl B, Bacon J)
Tritonia, cilia motor neurons 128:259 (Audesirk G)
–, complex mechanoreceptors 141:101, 111 (Audesirk G, Audesirk T)
–, fixed action pattern control 123:253 (Taghert PH, Willows AOD)
–, neurons controlling gill movements 131:277 (Dickinson PS)
–, oral mechanoreceptors 130:71 (Audesirk TE), 79 (Audesirk TE, Audesirk GJ)
–, swim interneurons 121:325 (Getting PA)
Triturus, aerial and aquatic visual acuity 128:359 (Manteuffel G, Himstedt W)
–, mechanoreceptors in embryonal head skin 135:341 (Roberts A)
Trout, see *Salmo, Salvelinus*
Trygon, ampullae of Lorenzini in the magnetic field 126:333 (Brown HR, Ilyinsky OB)
Trypsin, feeding responses in *Hydra* elicited by – 150:521 (Kitajima M, Hanai K)
Tryptophan 2,3-dioxygenase in the blowfly 124:117 (Schartau W)
– – in stick insect development 132:351 (Stratakis E, Schartau W)
– metabolism in the mouse 124:189 (Shetty AS, et al)
– – during stick insect development 137:123 (Stratakis E)
Tubifex, anaerobic energy metabolism 130:337 (Hoffmann KH, et al)
–, gluconeogenesis 149:477 (Mustafa T, et al)
–, phosphagens and phosphokinases 143:237 (Hoffmann KH)
Tuna, see *Euthynnus, Thunnus*
Tuning of weakly electric fish electroreceptors 133:317, 327 (Viancour TA)
Tupinambis, mechanics and structure of lung 138:321 (Perry SF, Duncker H-R)
–, pulmonary diffusing capacity 142:509 (Glass ML, et al)
Turkey, K_m of NADH for M_4-LDH 137:115 (Greaney GS, Somero GN)
Turning in a beetle 136:279 (Frantsevich LI, Mokrushov PA)
Turnip beetle, see *Entomoscelis*
Turtle, see *Chelonia, Chrysemis, Malaclemys, Pseudemys, Terrapene, Testudo*
Twist in insect rhabdomeres 133:291 (Smola U, Tscharntke H); 134:109; 137:281 (Ribi WA); 142:1 (Wehner R, Meyer E), 43 (Smola U, Wunderer H)
Two-tone suppression of cricket auditory neuron 144:117 (Boyan GS)
Tympanal vibrations in the cricket ear 123:193 (Michelsen A, Larsen ON), 217 (Larsen ON, Michelsen A)

Tyto, interaural pathway in sound localization 144:299 (Moiseff A, Konishi M)
–, sound localization 133:1 (Knudsen ET, et al), 13 (Knudsen EI, Konishi M)

U

Uca, larval spectral sensitivity 133:311 (Forward RB Jr, Cronin TW)
–, sinus gland hormones 122:359 (Keller R)
–, vibration transmission through walking legs 150:483 (Aicher B, et al)
Ultrasonic cries of a bat 134:165 (Mogensen F, Møhl B)
Ultrasound, avoidance behavior of green lacewings to – 131:113 (Miller LA, Olesen J)
– recognition in house mice 148:245 (Ehret G, Haack B)
Ultraviolet light, orientation of bees to – 134:151 (Edrich W, et al)
– spectrum, wavelength discrimination – of pigeons 141:47 (Emmerton J, Delius JD)
Urea kinetics in the rock hyrax 138:307 (Hume ID, et al)
– production, effects of aldosterone in frog – 134:359 (Johnston JW, Jungreis AM)
– -cycle enzymes in a lizard 140:261 (Baby TG, Reddy SRR)
– -requiring lactate dehydrogenases in fishes 125:135 (Yancey PH, Somero GN)
Urine, primary, formation during diuresis in leech 146:5 (Zerbst-Boroffka I, et al)
– composition in saltwater crocodiles 144:261 (Grigg GC)
Uromastix, water and electrolyte balance 146:81 (Lemire M, et al)
Urophysis, antidiuretic effects of fish – in rats 135:183 (Ichikawa T)
Uropod steering movement, neural mechanisms underlying crayfish – 145:471 (Yoshino M, et al)
Urotensins, vasoactive properties in birds 126:193 (Woo NYS, Bern HA)
Ursus, thermoregulation 146:63 (Best RC)

V

Valanga, light adaptation in photoreceptors 145:169 (Matić T, Laughlin SB)
–, photoreceptor performance and membrane turnover 150:509 (Williams DS)
Valve snap and closure responses in giant scallop 137:97 (Thompson RJ, et al), 105 (Zwaan A de, et al)
Vampire bat, see *Desmodus*
Varanus, aerobic metabolism 127:331 (Wood SC, et al)
–, lung compliance 138:321 (Perry SF, Duncker H-R)
–, pulmonary diffusing capacity 142:509 (Glass ML, et al)
Vascular resistance, effect of catecholamines on – in the cod 137:139 (Wahlqvist I)
Vascularization of crayfish abdominal nerve cord 143:93 (Brown SK, Sherwood DN)
Vasculature, sympathetic nervous control of cod – 144:153 (Wahlqvist I, Nilsson S)
–, systemic, cholinergic mechanisms in the trout 122:325 (Wood CM)
Vasoactive drugs, effects on unidirectional water flux in toadfish perfused head 149:115 (Oduleye SO, Evans DH)
– intestinal polypeptide, effect on chloride secretion in a tilapia 146:27 (Foskett JK)
– properties of urotensins in birds 126:193 (Woo NYS, Bern HA)
– responses to cholinergic and adrenergic stimulation in perfused toadfish head 149:107 (Oduleye SO et al)
Venom, activating cholinergic response of clam heart 129:61 (Elliott FJ)
Ventilation of crayfish submerged in normoxic water and exposed in air 138:67 (Taylor EW, Wheatly MG)
– during crab temperature acclimation 128:109 (McMahon B, et al)
– during exercise in turtle 134:315 (Jackson DC, Prange HD)
–, effects of catecholamines on eel – 129:343 (Peyraud-Waitzenegger M)
–, mechanosensory input on dobsonfly larva – 149:423 (Fitch GK, Kammer AE)
– during prey-capture by dragonfly larvae 128:341 (Weber T, Caillière L)
–, *Morelia* 122:403 (Donelly P, Woolcock AJ)
–, oxygen transport in crayfish blood 123:105 (Angersbach D, Decker H)
– in polychaetes 145:45 (Kristensen E)
–, rhythmic motor patterns in *Limulus* 141:77 (Watson III WH), 87 (Wyse GA, et al)
– in sea snake lung 145:109 (Seymour RS, et al)
– of turtle lungs 126:203 (Burggren WW, et al)
– in the water snake 127:299 (Gratz, RK)
–, branchial, effect on acid-base changes in crab hemolymph 141:489 (Burnett LE, Johansen K)
–, tracheal, in the giant silkmoth 145:1 (Wasserthal LT)
–, –, in insect wings 147:27 (Wasserthal LT)
Ventilatory effects of catecholamines, seasonal changes in the eel 138:367 (Peyraud-Weitzenegger M, et al)
– patterns, diurnal, in garter snake 149:503 (Hicks JW, Riedesel ML)
– pauses, physiology of – in a crab 145:81 (Burnett LE, Bridges CR)
– reflex response to hyperoxia in crayfish 140:193 (Massabuau J-C, et al)
– responses to hypoxia and hypercapnia of *Natrix* 129:105 (Gratz RK)
– system, coordinating interneurons in locust – 137:305 (Pearson KG)
Ventral cord, coding of sound signals in the locust 128:213 (Kalmring K, et al)
– –, giant auditory neuron in the bush cricket 132:225 (Kalmring K, et al)
– –, movement detectors in dragonfly – 141:327 (Olberg RM)
– –, response transmission in locust auditory pathway 126:25 (Kalmring K, et al)
Vertebrates, extraretinal photoreceptors 130:277 (Hartwig HG, van Veen T)
Vertical cells in fly optic lobe 126:57 (Eckert H, Bishop LG)
– plane, directional hearing by *Gadus* 122:1 (Hawkins AD, Sand O)
Vestibular nerve, afferent and efferent neuron responses to auditory inputs in frog – 147:305 (Bricout-Berthout A, Caston J)
– system, feedback loop in frog – 133:63 (Caston J, Gribenski A)
– –, interrelations with auditory system in frog labyrinth 133:141 (Caston J, Gribenski A)
Vibration, directional sensitivity of zebrafish larval Mauthner cells to – 140:337 (Eaton RC, Kimmel CB)
–, influence on hearing in crickets 143:135 (Wiese K)
–, water – receptor on crayfish antenna 144:533 (Tautz J, et al); 149:409 (Masters WM, et al)
– detection in sand by a scorpion 131:23, 31 (Brownell P, Farley FD)
– measurements of perch saccular otolith 123:85 (Sand O, Michelsen A)
– reception by caterpillar hairs 125:67 (Tautz J)
– receptors in bug legs 150:261 (Čokl A)
– – in spiders 148:175 (Barth FG, Geethabali), 187 (Speck J, Barth FG)
– transmission through crab walking legs 150:483 (Aicher B, et al)
Vibrational components in insect disturbance stridulation 135:259 (Masters WM)
Vibrations of webs and spider prey capture behavior 148:445 (Klärner D, Barth FG)
Vibratory interneurons in bug central nervous system 139:87 (Čokl A, Amon T)
Vibrissae, cells in cat somatosensory cortex responding to displacement of – 125:29 (Hellweg FC)
Violet receptor in crayfish eye 142:199 (Cummins D, Goldsmith TH)
Vipera, Ca and acidosis of myocardium 127:307 (Gesser H, Poupa O)
–, thermal acclimation of O_2-Hb binding 130:293 (Johansen K, Lykkeboe G)
Viscoelastic coupling, role in insect mechanoreceptor adaptation 131:1 (Chapman KM, et al)
Vision, accommodation in bird eyes 137:267 (Levy B, Sivak JG)
–, aerial and aquatic visual acuity of *Triturus* 128:359 (Manteuffel G, Himstedt W)
–, amphipod phototaxis 135:243 (Forward RB Jr)
–, angular tracking and optomotor response in a hoverfly 140:145 (Collett TS)
–, antennal tracking of moving targets in crickets 142:419 (Honegger H-W)
–, arhabdomeric cells in scorpion median eye 130:265 (Schliwa M, Fleissner G)

Vision, background structure and moving prey discrimination in toads 147:179 (Ewert J-P, et al)
–, behavioural analysis of ant color vision 131:217 (Kretz R)
–, bipolar cell ramifications in inner plexiform layer of turtle retina 144:459 (Weiler R)
–, brightness perception in *Drosophila* mutants 133:283 (Reichert H, Bicker G)
–, cellular patterns and spectral sensitivity of *Papilio* larval ocelli 139:41 (Ichikawa T, Tateda H)
–, cerebral photosensitive neurons in orb weaving spiders 150:467 (Yamashita S, Tateda H)
–, chromatic aberration of a dipteran corneal lens 146:493 (McIntyre P, Kirschfeld K)
–, chromatic adaptation in the honeybee 144:543 (Neumeyer C)
–, chromatic properties of bee medulla and lobula interneurons 137:215 (Hertel H)
–, circadian rhythm of crayfish retinal sensitivity 136:313 (Larimer JL, Smith JTE)
–, circadian rhythm of moth visual sensitivity 150:165 (Bennett RR)
–, color contrast in *Drosophila* 130:161 (Fischbach KF)
–, color discrimination in crabs 133:159 (Leggett LMW)
–, color discrimination by a hummingbird 130:209 (Goldsmith TH, Goldsmith KM)
–, color discrimination in dim light by a moth 129:257 (Schlecht P)
–, color opponent neurons of the bee 142:81 (Riehle A)
–, color receptors in crab compound eyes 145:549 (Martin FG, Mote MI)
–, color receptors in lepidopteran larval eyes 149:317 (Ichikawa T, Tateda H)
–, components of *Limulus* ventral photoreceptor light response 141:303 (Maaz G, et al)
–, conditioning to visual stimuli in bees 135:217 (Erber J, Schildberger K)
–, configurational visual stimuli and neuronal activity in frogs 141:139 (Schürg-Pfeiffer E, Ewert J-P)
–, connexions between dragonfly ocellar receptors and second-order neurons 149:389 (Simmons PJ)
–, contrast frequency-dependence of fly behavioral responses 145:241 (Eckert H, Hamdorf K)
–, coupling between locust photoreceptors 125:13 (Lillywhite PG)
–, crayfish sustaining fiber dendritic projection correlates with visual receptive fields 146:175 (Kirk MD, et al)
–, crustacean compound eye adapted for low light intensities 143:503 (Nilsson D-E, Nilsson HL)
–, dark induced membrane changes in crayfish photoreceptors 131:191 (Eguchi E, Waterman TH)
–, dark recovery of fly photoreceptors 122:215 (Moring J, Järvilehto M)
–, development of fly visual receptor potentials 150:529 (Järvilehto M, Finell N)
–, direction-specific neurons in frog pretectum 140:53 (Katte O, Hoffmann K-P)
–, directionally-selective visual neurons in bee lobula and brain 147:155 (DeVoe RD, et al)
–, discrete potentials in locust and dragonfly ocelli 128:347 (Wilson M)
–, diurnal changes in angular sensitivity of crab photoreceptors 144:99 (Leggett LMW, Stavenga DG)
–, drone bees fixate queen with dorsal frontal part of eyes 136:263 (Praagh JP van, et al)
–, duplex system in slug simple retina 133:125 (Suzuki H, et al)
–, effect of compound eyes on ommochromes in insect epidermis 130:331 (Bückmann D)
–, effect of light on crab rhabdom synthesis 142:19 (Stowe S)
–, effect of spectral light deprivation on bee spectral sensitivity 147:365 (Hertel H)
–, efferent control in spider eyes 143:477 (Yamashita S, Tateda H)
–, efferent system of dragonfly lateral ocellus 125:341 (Kondo H)
–, electrophysiology of bee's specialized photoreceptors 141:19 (Labhart T)
–, electrophysiology of *Drosophila* ocelli 126:15 (Hu KG, et al)
–, electrophysiology of fly photoreceptor classes 129:19 (Hardie RC)
–, equivalent circuit for inter-receptor coupling in ant retina 139:277 (Martin FG, Mote MI)
– excitatory and inhibitory components in fly landing response 138:253 (Eckert H, Hamdorf K)
–, extraocular photoreceptors on lepidopteran genitalia 148:483 (Arikawa K, Aoki K)
–, eye closure and retinal ganglion cell responses in the toad 125:301 (Borchers H-W, Ewert J-P)
–, eye movements and vertical steering in euphausiid Crustacea 137:255 (Land MF)
–, eye-scanning during walking in the crab 124:249 (Sandeman DC)
–, field potential analysis and second order neurons in the fly 126:297 (Zimmerman RP)
–, flicker response enhancement in *Drosophila* lamina 137:341 (Cosens D, LeBlanc N)
–, foveal fixation and tracking in a mantis 139:307 (Rossel S)
–, functional characteristics of ant photoreceptors 137:63 (Mote MI, Wehner R)
–, functional organisation of locust ocelli 124:297 (Wilson M)
–, functions of optomotor system in hoverfly voluntary flight 138:271 (Collett TS)
–, geometrical optics of *Notonecta* eye 140:59 (Schwind R)
–, giant vertical cells in fly lobula plate 149:163 (Hengstenberg R, et al), 179 (Hengstenberg R)
–, graded potentials in locust ocellus 124:317 (Wilson M)
–, H1-neurone in fly third optic ganglion 135:29 (Eckert H)
–, horizontal cells in fly lobula plate 143:511 (Eckert H)
–, information transmission in the fly eye 126:87 (French AS, Järvilehto M)
–, innervation of cod iris 138:149 (Nilsson S)
–, integration of sensory information in *Apteronotus* optic tectum 147:287 (Bastian J)
–, interaction between flesh-fly photoreceptors 125:209 (Mimura K)
–, interneurones in bee brain 121:65 (Erber J, Menzel R); 134:253 (Guy RG, et al)
–, intracellular optical physiology of bee's eye 137:193 (Bernard GD, Wehner R), 205 (Wehner R, Bernard GD)
–, intracellular responses of dragonfly ocellar neurons 139:25 (Patterson JA, Chappell RL)
–, ion gradient and photoreceptor sensitivity 125:237 (Hamdorf K, et al)
–, ionic dependence of pigment migrations in crayfish retina 144:35 (Frixione E, Aréchiga H)
–, ionic effects on fly photoreceptor potentials 132:87 (Muijser H)
–, K and Ca in cricket ommatidium 127:245 (Burovina IV, et al)
–, large ocellar second order neurons of cockroach 149:215 (Mizunami M, et al)
–, lateral interactions in a compound eye 132:159 (Marčelja S)
–, light adaptation in fly and dragonfly peripheral visual systems 128:319 (Laughlin SB, Hardie RC)
–, light adaptation in insect photoreceptors 145:169 (Matić T, Laughlin SB)
–, light-dark adaptation in *Artemia* compound eye 143:389 (Nilsson D-E, Odselius R)
–, light-dark transformations in crayfish retinula cells 145:179 (Tsutsumi V, et al)
–, light induced modification of *Drosophila* phototactic behavior 129:35 (Willmund R)
–, light sensitivity of *Aplysia* rhinophores and eyes 136:257 (Jacklet JW)
–, lobula plate giant interneurons in a *Drosophila* mutant 124:287 (Heisenberg M, et al)
–, luminance dependence of bee color discrimination 141:379 (Rose R, Menzel R)
–, membrane turnover in crab photoreceptors 131:205 (Nässel DR, Waterman TH)
–, microspectrophotometry of *Drosophila* visual pigments 140:275 (Stark WS, Johnson MA)
–, microspectrophotometry of photoreceptors of palaeognathous birds 144:271 (Sillman AJ, et al)

Vision, movement detection in *Evarcha* eyes 124:15 (Duelli P)
–, movement detection in the fly 134:45 (Pick B, Buchner E)
–, movement direction sensitive retinal ganglion cells in the toad 129:211 (Ewert J-P, et al)
–, movement sensitive cells in fly medulla 138:93 (DeVoe RD)
–, movement-sensitive neuron in *Notonecta* optic lobe 123:315 (Schwind R)
–, neurons sensitive to moving configurational stimuli in toads 126:35 (Wietersheim A v, Ewert J-P)
–, non-linearity and light adaptation in fly photoreceptor 144:53 (Dubs A)
–, object- and self-movement detectors in dragonfly ventral nerve cord 141:327 (Olberg RM)
–, ocellar component of dragonfly flight equilibrium control 141:335 (Stange G)
–, onset of light adaptation in fly visual cells 132:153 (Moring J, et al)
–, optical characteristics of flounder eye 146:345 (Sivak JG)
–, optical properties of anuran eyes during metamorphosis 150:329 (Sivak JG, Warburg MR)
–, optical properties of cephalopod eye 147:323 (Sivak G)
–, optical system of amphipod transparent eye 147:339 (Nilsson D-E)
–, optical system of crayfish eye 135:1 (Vogt K)
–, optics of deep-sea amphipod eyes 145:209 (Land MF)
–, optics of euphausiid eyes 130:49 (Land MF, et al)
–, optics and visual performance of owl's eye 145:341 (Martin GR)
–, participation of color receptors in bee phototaxis 122:27 (Kaiser W, et al)
–, pattern discrimination in *Drosophila* 146:229 (Mimura K)
–, photopigment model in invertebrate – 135:209 (Razmjoo S, Hamdorf K)
–, photoreception of turtle pineal gland 140:173 (Meissl H, Ueck M)
–, photoreceptor performance in mantis eye 131:95 (Rossel S)
–, photoreceptor performance and membrane turnover in locusts 150:509 (Williams DS)
–, photoreceptor responses in *Loligo* 122:241 (Pinto LH, Brown JF)
–, photoreceptor sensitivity in nocturnal spider eye 141:53 (Laughlin S, et al)
–, photostable pigment in fly photoreceptors No. 7 125:275 (Kirschfeld K, et al); 143:3 (McIntyre P, Kirschfeld K)
–, phototaxis of walking flies in correlation with receptive fields of photoreceptors 144:75 (Mimura K)
–, pierid tracheal tapetum 132:1 (Ribi WA)
–, pigment migration in crayfish retinula cells 125:91 (Olivo RF, Larsen ME)
–, pigment migration in dragonfly ocelli 129:199 (Stavenga DG, et al)
–, pigment migration in insect superposition eyes 143:491 (Dreisig H)
–, polarization-sensitive response of water bug to UV light 150:87 (Schwind R)
–, polarization sensitivity of fly course control 139:177 (Wolf R, et al)
–, polarized light detection in bee rhabdomeres 137:281 (Ribi WA)
–, potentials in bee ocellar interneurons 143:427 (Milde J)
–, prey feature detectors in toad visual system 126:43 (Ewert J-P, et al)
–, prey-selective neurons in toad optic tectum 144:429 (Weerasuriya A, Ewert J-P)
–, properties of cockroach visual interneurons 141:395 (Mote MI, Rubin LJ), 403 (Mote MI, et al)
–, properties of crayfish optic lobe sustaining fibers 146:175; 150:419 (Kirk MD, et al)
–, properties of toad tectal T5 neurons 132:191 (Ewert J-P, et al)
–, receptive field patterns in fly photoreceptors 141:349 (Mimura K)
–, receptive fields of cricket medulla neurons 136:191 (Honegger H-W)
–, receptive field of swallowtail butterfly stemmata 146:191 (Ichikawa T, Tateda H)
–, receptors in fly spectral preference 121:241 (Hu KG, Stark WS)
–, refractive indices of nictitating membranes 125:335 (Sivak JG, et al)
–, regionalization in the eye of *Leptograpsus* 123:299 (Sandeman DC)
–, responses of fly optic lobe interneurons to motion in depth 141:123 (Eriksson ES)
–, responses to moving stimuli in goldfish optic tectum 128:13 (Riemslag FCC, Schellart NAM)
–, responses of salamanders to stationary visual patterns 124:49 (Himstedt W, et al)
–, retinal pigment migration independent of visual cell actvity in a moth 143:305 (Hamdorf K, Höglund G)
–, retinal responses in *Nautilus* 134:281 (Lange GD, et al)
–, rhabdom degradation in crayfish after long term dark adaptation 148:419 (Hafner GS, et al)
–, rhabdom synthesis in crab isolated eyestalks and retinae 148:313 (Stowe S)
–, rhodopsins, photoreceptor structure and receptor potential in moth developing pupal eye 150:153 (White RH, et al)
–, role in fish schooling 135:315 (Partridge BL, Pitcher TJ)
–, role of ocelli and compound eyes in fly phototaxis 135:85 (Hu KG, Stark WS)
–, role of pineal eye in *Xenopus* embryos and larvae 145:413 (Foster RG, Roberts A)
–, role of retinal acid phosphatase in crab photoreceptor membrane turnover 149:353 (Couet HG de, Blest AD)
–, sensitivity of white-eyed crayfish photoreceptors 122:273 (Kong K-L, Goldsmith TH)
–, sensory deprivation of locust visual interneuron 135:191 (Bloom JW, Atwood HL)
–, sex-specific photoreceptors in a fly 145:139 (Hardie RC, et al)
–, sexual dimorphism in bibionid fly visual system 150:379, 395 (Zeil J)
–, simultaneous color contrast in honeybee 139:165 (Neumeyer C)
–, single electrode studies on butterfly retina 150:271 (Horridge GA, et al)
–, single photon signals and transduction in an insect eye 122:189 (Lillywhite PG)
–, size and distance estimation in bulldog ant 121:33 (Via SE)
–, slow potentials in *Limulus* optic fibers 141:239 (Behrens ME, Fahy JL)
–, spatial integration in retina and lamina of fly compound eyes 146:321 (Dubs A)
–, spatial processing of visual information in fly movement-detecting pathway 140:1 (Srinivasan MV, Dvorak DR)
–, spatial and temporal sensitivity of ground squirrels 136:291 (Jacobs GH, et al)
–, spectral effects of pupil in fly photoreceptors 146:145 (Vogt K, et al)
–, spectral mechanisms of firefly eye 135:21 (Lall AB, et al)
–, spectral and polarization sensitivity of beetle photoreceptors 142:95 (Gribakin FG)
–, spectral sensitivities of bumblebee compound eyes and medican ocellus 139:261 (Meyer-Rochow VB)
–, spectral sensitivity of crustacean larvae 133:311 (Forward RB Jr, Cronin TW)
–, spectral sensitivitiy of fly monopolar neurons 123:335 (Moring J)
–, spectral sensitivity of fly photoreceptors 121:289 (Stark WS, et al); 133:23 (Hardie RC, et al), 41 (Smola U, Meffert P); 134:95 (Bernard GD, Stavenga DG)
–, spectral sensitivitiy of landing blowfly 150:319 (Tinbergen J, Abeln RG)
–, spectral sensitivity and reverse Purkinje shift in ocellar neurons 144:91 (Mobbs PG, et al)
–, spectral sensitivity and selective-adaptation in firefly compound eye 147:195 (Lall AB, et al)
–, spectral sensitivity and tiering of jumping spider photoreceptors 145:227 (Blest AD, et al)
–, spherical aberration of roach lens 121:135 (Scroczyński S)
–, structural changes in locust light-deprived rhabdom 144:357 (Bloom JW, Atwood HL)
–, suppression of photoreceptor noise by oxidative metabolism 142:181 (Payne R)
–, suprachiasmatic neurons in rat and cat 135:349 (Groos GA, Mason R)
–, sustained and transient responding units in cricket medulla 125:259 (Honegger H-W)

Vision, synaptic transmission by locust ocellar neurons 145:265; 147:401 (Simmons PJ)
–, tectal neuron responses to prey stimuli in salamanders 135:251 (Himstedt W, Roth G)
–, temporal resolving power of locust photoreceptors 144:61 (Howard J)
–, three-dimensional optomotor torque system of *Drosophila* 145:321 (Blondeau J, Heisenberg M)
–, twisted rhabdomeres in insect eyes 133:291 (Smola U, Tscharntke H); 134:109 (Ribi WA); 142:1 (Wehner R, Meyer E), 43 (Smola U, Wunderer H)
–, vertical cells in fly lobula plate 126:57 (Eckert H, Bishop LG)
–, vertical-horizontal neuron in blowfly lobula plate 149:195 (Eckert H)
–, violet receptor in crayfish eye 142:199 (Cummins D, Goldsmith TH)
–, visual field size, binocular domain and ommatidial array in bee eyes 143:17 (Seidl R, Kaiser W)
–, visual pigments of the gecko 138:121 (Crescitelli F)
–, wavelength discrimination in *Drosophila* 150:31 (Hernández de Salomon C, Spatz H-C)
–, wavelength discrimination function in a hummingbird 143:103 (Goldsmith TH, et al)
–, wavelength discrimination in pigeons 141:47 (Emmerton J, Delius JD)
–, wavelength specific behavior of a whitefly 144:83 (Coombe PE)
–, achromatic, of bees at low light intensities 141:389 (Menzel R)
–, tetrachromatic, in a moth 129:235 (Langer H, et al)
Visual acuity, aerial and aquatic, of *Triturus* 128:359 (Manteuffel G, Himstedt W)
– attention in *Drosophila* 140:69 (Wolf R, Heisenberg M)
– control of flight in locusts 131:39, 49 (Baker PS), 67 (Cooter RJ)
– cues, effect on control of lobster compensatory eye responses 150:23 (Schöne H, et al)
– field size of bee eyes 143:17 (Seidl R, Kaiser W)
– flight orientation in *Drosophila* 130:113 (Heisenberg M, Wolf R); 140:69 (Wolf R, Heisenberg M)
– interneurons in bee protocerebrum 121:65 (Erber J, Menzel R)
– learning in a *Drosophila* mutant 127:29 (Bicker G, Reichert H)
– neurons, directionally-selective, in bee lobula and brain 147:155 (DeVoe RD, et al)
– orientation in walking *Drosophila* 148:471 (Bülthoff H, et al)
– pigment, photostable, in fly photoreceptor R 7 125:275 (Kirschfeld K, et al); 143:3 (McIntyre P, Kirschfeld K)
– pigments of *Drosophila* R 1–6 140:275 (Stark WS, Johnson MA)
– –, labile behavior of gecko – 138:121 (Crescitelli F)
– – in retina of palaeognathous birds 144:271 (Sillman AJ, et al)
– prey capture behavior in frogs 142:141, 151 (Comer C, Grobstein P)
– reflex interaction in a hoverfly 140:145 (Collett TS)
– scanning in the honey bee 130:173 (Anderson AM)
– stimuli, configurational, moved in z, y coordinates 129:207 (Beck A, Ewert J-P)
– system, neurons sensitive to moving configurational stimuli in toads 126:35 (Wietersheim A v, Ewert J-P)
Visually mediated snapping in the bulldog ant 121:33 (Via SE)
Visuotopic mapping, responses in teleostean torus longitudinalis related to – 150:39 (Northmore DPM, et al)
Viviparus, enzymes in hepatopancreas 129:129 (Sollock RL, et al)
Vocalization, acoustic imaging in bat sonar 135:61 (Simmons JA, Stein RA)
–, effect on auditory processing in bat inferior colliculus 132:39 (Schuller G)
–, syringeal denervation and hypoglossal dominance in canaries 134:227 (Nottebohm F, et al)
–, ultrasonic cries of a bat 134:165 (Mogensen F, Møhl B)
Vole, see *Microtus, Alticola*
Volucella, computation of interception courses 125:191 (Collett TS, Land MF)
Volume regulation of crab muscle fibers 128:153 (Leader JP, Bedford JJ)
– –, hyperosmotic, of flounder heart ventricle cells 140:185 (Vislie T)

W

Walking, escape behavior of cockroaches during – 142:339 (Camhi JM, Nolen TG)
–, eye-scanning during – in the crab 124:249 (Sandeman DC)
– in *Gerris* 123:43, 51 (Bowdan E)
–, leg coordination in lobsters during – 139:293 (Chasserat C, Clarac F)
–, modulation of giant interneuron excitability in cockroach during – 138:231, 241 (Daley DL, Delcomyn F)
–, perturbation of stick insect – 148:195 (Dean J, Wendler G)
–, forward, in a crab 136:301 (Sleinis S, Silvey GE)
– leg, chemoreceptors in lobster – 146:181 (Derby CD, Atema J)
– –, common inhibitory neurone in crab – 143:111 (Ballantyne D, Rathmayer W)
– –, motor neurones in a scorpion – 140:31 (Bowerman RF, Burrows M)
Water absorption in hen caeca 147:61 (Rice GE, Skadhauge E)
– – in rabbit caecal pouch 133:205 (Leng-Peschlow E, Marty J)
– – in tilapia intestine 146:1 (Mainoya JR)
– balance in the cod 124:149 (Fletcher CR)
– –, control of renal function in salamander larvae 149:91 (Stiffler DF, et al)
– –, effects of temperature and housing on mouse – 133:241 (Esher RJ, Wolfe JL)
– –, evaporative water loss in lizards 149:25 (Mautz WJ)
– –, function of fowl colon and coprodeum 146:51 (Rice GE, Skadhauge E)
– – in a Saharan lizard 146:81 (Lemire M, et al)
– content in dehydrated antelope intestine 135:165 (Skadhauge E, et al)
– deprivation, see also dehydration
– –, nitrogen catabolism in ground squirrels during – 149:565 (Bintz GL, Strand CE)
– discrimination by calcium ions in sockeye salmon 127:157 (Bodznik D)
– economy, role of CNS in control of toad – 146:95, 101 (Segura ET, et al)
– exchange in eel gills 124:137 (Isaia J, Isaia A)
– excretion in the leech 139:37 (Wenning A, et al)
– homeostasis in crocodile 144:261 (Grigg GC)
– loss, evaporative, in panting fowl 145:63 (Brackenbury J, et al)
– –, –, in prairie dogs 139:135 (Welch WR)
– –, –, in rodents 128:177 (Edwards RM, Haines H)
– –, respiratory and cutaneous, in lizards 149:25 (Mautz WJ)
– metabolism in the rock hyrax 131:303 (Rübsamen K, et al)
– receptor, effects of sugars on fly – 126:131 (Wieczorek H, Köppl R); 138:167 (Wieczorek H)
– restriction, effect on rock hyrax metabolic rate, water turnover and thermoregulation 138:315 (Rübsamen K, Kettembeil S)
– source preference of salmon fry 127:139 (Bodznik D)
– strider, see *Gerris*
– surface waves, perception by a surface-feeding fish 140:163 (Bleckmann H); 143:485 (Bleckmann H, et al); 145:331 (Bleckmann H, Schwartz E)
– transport in eel intestine 138:87 (Ando M)
– – in mosquito larval salt-excreting organ 138:59 (Asakura K)
– – regulation in cockroach rectum 138:357 (Steele JE, Tolman JH)
– turnover, effect of water restriction on rock hyrax – 138:315 (Rübsamen K, Kettembeil S)
– vibration receptor on crayfish antenna 144:533 (Tatz J, et al); 149:409 (Masters WM, et al)
– waves, lateral line taxis to – in clawed toad 148:535 (Elepfandt A)
– –, responses of leech to – 144:111 (Young SR, et al)

Wavelength discrimination in *Drosophila* 150:31 (Hernández de Salomon C, Spatz H-C)
– – in pigeon 141:47 (Emmerton J, Delius JD)
– – function in a hummingbird 143:103 (Goldsmith TH, et al)
– specific behavior in a butterfly 149:325 (Kolb G, Scherer C)
Weta, see *Hemideina*
Whip-scorpion, see *Mastigoproctus*
Whitefly, see *Trialeurodes*
Wind, see also air
– acceleration, role in cockroach escape behavior 142:347 (Plummer MR, Camhi JM)
– detection, directional, in cockroach nymphs 147:471 (Dagan D, Volman S)
– direction, effects on pigeon navigation 128:285 (Ioalé P, et al), 297 (Waldvogel JA, et al)
– puffs, turning response of cockroach to – 128:193 (Camhi JM, Tom W)
– sensitive giant interneurones in *Periplaneta* 121:307 (Westin J, et al)
Wing beat frequency in flying locusts 141:233 (Baker PS, et al)
– circulation, hemolymph transport and tracheal ventilation in silkworm moths 147:27 (Wasserthal LT)
– movements in flying locusts 131:49 (Baker PS), 79 (Baker PS, Cooter RJ)
– –, stationary parameters of – and aerodynamic force production in blowfly 150:251 (Nachtigall W, Roth W)
– muscles, role in control of locust flight direction 131:59 (Baker PS)
– –, role in *Drosophila* courtship song 130:87 (Ewing AW)
– sensory system, relationships to ocellar efferent system in dragonflies 125:341 (Kondo H)
– stroke frequencies in dragonflies, relation to temperature and body size 144:229 (May ML)
– tegulae, connections with locust flight motoneurons 133:299 (Kien J, Altman JS)
Wings, properties of fly – during flight 133:351 (Nachtigall W)
Withdrawal behavior, reciprocal inhibition between – and feeding behavior in *Pleurobranchaea* 139:77 (Kovac MP, Davis WJ)
Woodchuck, see *Marmota*

X

Xanthine excretion in a desert scorpion 142:423 (Yokota SD, Shoemaker VH)
Xanthommatin, endocrine control of content in *Pieris* larvae 136:21 (Beydon P, et al)
Xantusia, respiratory and cutaneous water loss 149:25 (Mautz WJ)
Xenomystus, electroreception 148:345 (Bullock TH, Northcutt RG)
Xenopus, lateral line central pathways 136:203 (Plassmann W)
–, lateral line taxis 148:535 (Elepfandt A)
–, mechanoreceptors in embryonal head skin 135:341 (Roberts A)
–, oxygen and electrolytes in dehydrational death 128:169 (Hillman SS)
–, pineal eye in embryos and larvae 145:413 (Foster RG, Roberts A)

Y

Yaw movements in the flying locust 131:67 (Cooter RJ)
– torque in fly visual flight orientation 130:113 (Heisenberg M, Wolf R); 140:69 (Wolf R, Heisenberg M)
Yponomeuta, contact chemoreception in larvae 134:265 (Drongelen W van)

Z

Zebrafinch, see *Poephila*
Zebrafish, see *Brachydanio*
Zonotrichia, seasonal changes in blood composition 129:151 (deGraw WA, et al)
Zygiella, prey catching by vibratory signals 148:445 (Klärner D, Barth FG)